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ABSTRACT

The intent of this book is to provide the framework for educational experiences designed to develop creativity, self-reliance, and a sense of independence in the students' approach to learning. It is comprised of eight units on a variety of themes. Each unit stresses the use of thinking processes, such as creativity and problem solving. Emphasis is placed upon student self-direction. The book presents a curriculum used and evaluated with students in grades four through six. This curriculum could also be adapted for use with secondary students, as the thinking processes are the same. Chapter 1, entitled "Thinking and Feeling," includes activities on the topics of Bloom's Taxonomy, critical thinking, creativity, visualization, creative problem solving, and goal setting. Chapter 2, "Healthy Body-Healthy Mind," involves activities on nutrition and stress. Chapter 3, "Scientists Explore Unexplained Phenomena," includes activities on scientific procedure, becoming a scientist, applying scientific procedure to unexplained phenomena, and experimental design. Chapter 4, "The World of Beauty," explores and defines beauty. Chapter 5, "The Fine Arts," investigates art, drama, music, and dance. Chapter 6, "Understanding World Problems," uses creative problem solving to help students understand global problems. Chapter 7, "A World for Tomorrow," allows students to explore and forecast the future. Chapter 8, "Independent Learning," helps students prepare for and facilitate independent learning through student projects. Additional resources are listed for each chapter. (KR)

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CHRYSALIS

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Nurturing Creative and Independent Thought in Children

Grades 4-12

by Micki McKisson

Illustrated by Leslie W. LePere

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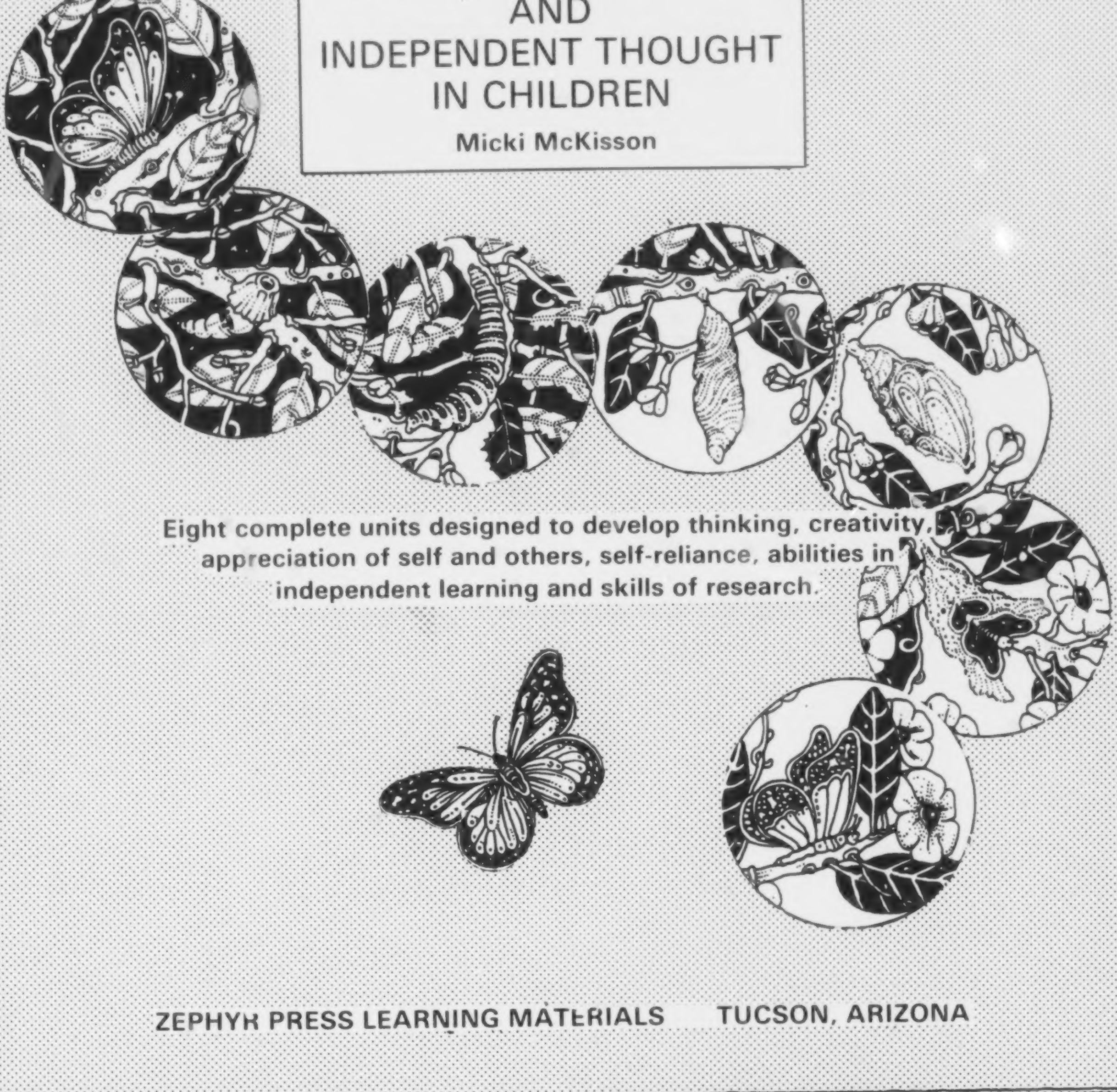
CHRYSALIS

NURTURING CREATIVE AND INDEPENDENT THOUGHT IN CHILDREN

Micki McKisson



Eight complete units designed to develop thinking, creativity, appreciation of self and others, self-reliance, abilities in independent learning and skills of research.

ZEPHYR PRESS LEARNING MATERIALS TUCSON, ARIZONA

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Made possible in part by a Federal Gifted Model Project grant from the Office of the State Superintendent of Public Instruction, State of Washington, in conjunction with the Issaquah School District, No. 411, Issaquah, Washington.

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FOREWORD

The growing interest in the education of gifted and talented persons has resulted in a substantial increase in the curriculum contributions from this field. In the selection of a thematic approach relating to creative thinking systems, there is a framework for the freedom and independent thought that this population predominantly exhibits. Structured freedom allows the elementary student the opportunity to explore, select from options, and investigate processes for thinking, while developing mental hooks and a method for evaluating the appropriateness of the creative venture.

A conscientious effort has been made to include the most relevant methods for allowing creative ideas to be explored by these elementary students in ***Chrysalis: Nurturing Creative and Independent Thought in Children***. The birth of this publication was much like a chrysalis, as the author evolved from a person with wonderfully creative ideas, to a practicing teacher of gifted and talented children, and on to program developer in the Issaquah School District, Issaquah, Washington.

Among the many enlightening experiences that I have had while Director of Gifted Programs for the State of Washington has been the opportunity to witness the growth of this author. This publication is the butterfly in Micki McKisson.

Mary Henri Fisher
Director of Gifted Programs
State of Washington

Special thanks to –

Doris Lund and *Mary Parker* for the initial input and development;

Leslie LePere for the cover design and illustrations that so well capture the concepts of the book.

Anita Halstead, Pat King, Libby Kresky, Betsy Filler, Margaret Moore, Kateri Brow, Gaither Kodis, and *my Mom* for input, support and editing assistance.

Darlene Molson, Sybil Brown, and *Kay Humann* for their care in the technical preparation of ***Chrysalis***.

Finally, my heartfelt appreciation goes to my editor, Joey Tanner, who saw the potential of this book and greatly facilitated the process of bringing it to life.

Editor's Note: Warm appreciation to Stephany Mack for her creative assistance in the production of ***Chrysalis***.

About the Artist –

Leslie W. LePere, Washington artist, received his Master of Fine Arts from Washington State University in 1969. He has been primarily working in watercolors and recently designed the book cover for *Still Life With Woodpecker* by Tom Robbins, Bantam Books, Inc., 1981.

AUTHOR'S NOTES

A chrysalis is the protective covering within which the transformation of a caterpillar to a butterfly occurs. Chrysalis is also defined as a sheltered state, a formative or undeveloped stage of being or growth.

In metaphorical terms, the development from the caterpillar to the butterfly is similar to the intent of education. Education is the chrysalis of our young.

As educators, we are provided with the unique opportunity to participate in the transformation of learners. That experience can be extremely positive, as we are largely responsible for setting an environment conducive to learning, as well as instilling in children a healthy attitude toward learning.

CHRYSALIS – Nurturing Creative and Independent Thought In Children is a book for teachers. Its intent is to provide the framework for educational experiences designed to develop creativity, self-reliance, and a sense of independence in the students' approach to learning.

CHRYSALIS is comprised of eight units on a variety of themes. Each unit stresses the use of thinking processes, such as creativity and problem solving. Emphasis is placed upon student self-direction. ***CHRYSALIS*** presents a curriculum used and evaluated with students in grades four through six. This curriculum could also be adapted for use with secondary students, as the thinking processes are the same.

Teachers are encouraged to use their own creativity and inner resources when using this book. Each activity and/or unit will be enriched by the individual perceptions and experiences of the teacher as well as those of the students.

Of great importance in the process of learner transformation is the enhancement of the learning environment itself. Great value is placed on the need for inner reflection as an integral aspect of the creative process. Provide a space for quiet reflection . . . equip it with soft music . . . pleasing pictures . . . rugs and pillows . . . all these communicate to students that inner reflection is both necessary and essential to the learning process.

The classroom should stimulate interest in a wide variety of topics by offering tantalizing "hands on" interest-development centers . . . complete with a wide range of books, filmstrips, posters and artifacts. In addition, learning centers that provide activities related to the content, the learning processes, and interest of the students will act as a catalyst for encouraging independent learning.

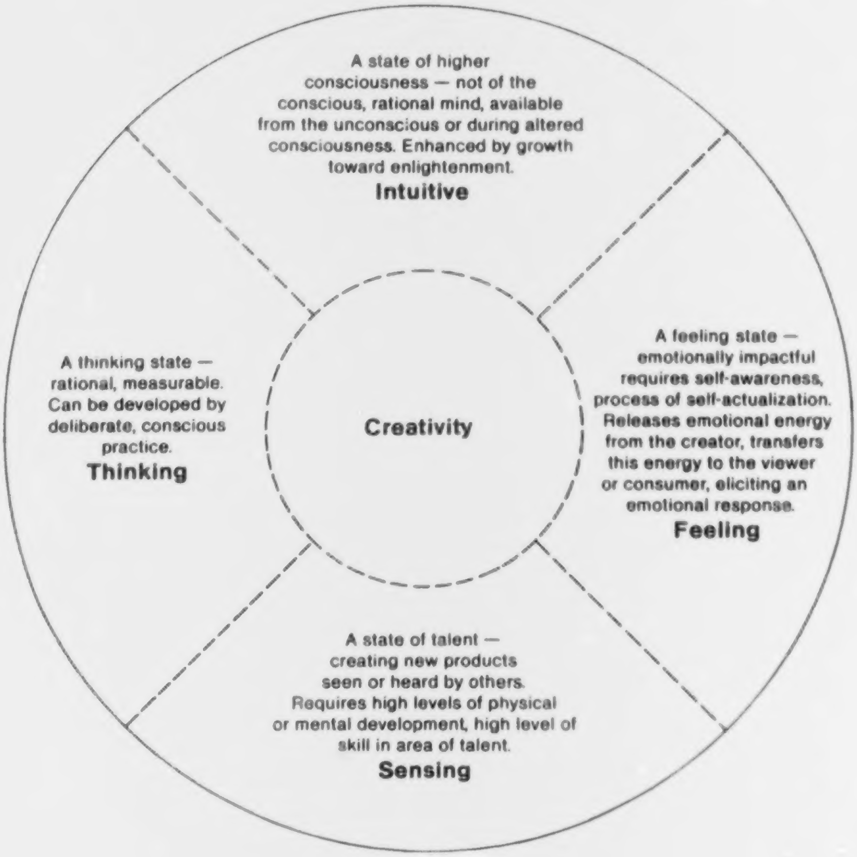
(continued)

Remove the boundaries of the classroom and students become aware that learning is an ongoing process which continues outside the classroom setting. Through field trips into the community and specialists invited into the classroom, students are provided with models of motivated and talented adults. Linking up with business, community organizations and projects, will provide students with a sense of applicability of the content, as well as responsibility and involvement within their environment.

Within the chrysalis of the educational environment, transformation can occur. It is hoped that, by using ***CHRYSALIS*** *in the classroom, creative and independent thought will be nurtured. Just as the butterfly must eventually leave the security of the chrysalis, so must students leave the "chrysalis" of the educational setting and rely on their own inner resources. When the children leave, it is hoped they will have the skills and confidence to face life in a creative, positive, and loving manner. When education achieves this, then truly the most magnificent transformation has occurred.*

Micki McKisson
February, 1982

INTEGRATIVE EDUCATION
A Model for Developing Human Potential



A state of higher consciousness — not of the conscious, rational mind, available from the unconscious or during altered consciousness. Enhanced by growth toward enlightenment.
Intuitive

A thinking state — rational, measurable. Can be developed by deliberate, conscious practice.
Thinking

A feeling state — emotionally impactful requires self-awareness, process of self-actualization. Releases emotional energy from the creator, transfers this energy to the viewer or consumer, eliciting an emotional response.
Feeling

A state of talent — creating new products seen or heard by others. Requires high levels of physical or mental development, high level of skill in area of talent.
Sensing

The integration of Jung's four basic functions, thinking, feeling, sensing, and intuiting are seen to produce another function, *the hallmark of true giftedness, creativity.* (Clark, 1983)

The creativity circle is from **Growing Up Gifted** by Barbara Clark. Published by Charles E. Merrill Publishing Company. Columbus, Ohio, 1983. Used with permission.

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"Let our teaching be full of ideas, hitherto it has been stuffed only with facts."
— Anatole France

1

The butterfly creates eggs to allow continual rebirth. This unit plants the fertile seeds of productive and creative thought. It attempts to assist students to recognize their own inner resources, the seeds of which were planted long ago and, in some instances, forgotten.

THINKING and FEELING

Thinking and Feeling is intended to lay the framework for the subsequent units. This unit defines the thinking skills used throughout the book and provides activities that strengthen and develop them. The thinking skills addressed in this unit include critical thinking, higher level thinking skills, creativity, problem solving, goal setting, and visualization techniques.

BLOOM'S TAXONOMY

Bloom's Taxonomy, a classification or model of the levels of thinking, was first published in 1964 in the ***Taxonomy of Objectives: The Classification of Educational Goals,*** by Kratwohl, Bloom, and Masias. The taxonomy identifies six different levels of thinking . . . knowledge, comprehension, application, analysis, synthesis, and evaluation. The authors determined that for optimal learning, students must learn to think at all levels . . . that teaching must change from the memorization of information and the testing for knowledge or facts.

Even so, few opportunities are given, even now, for students to expand their thinking by using the higher level thinking processes. As students begin to be introduced to higher cognitive processes, their level of awareness and depth of thinking is increased. Students need learning experiences that not only focus on information, but also provide opportunities to analyze, synthesize, and evaluate the topic being studied. These "higher levels" are essential in the development of the independent learning skills presented in ***Chrysalis.***

BLOOM WITH BLOOM'S TAXONOMY

STUDENTS CREATE LEARNING ACTIVITIES AND DESIGN POSTERS REPRESENTING THE SIX LEVELS OF BLOOM'S TAXONOMY.

OBJECTIVE

The students will

be able to apply Bloom's Taxonomy to the learning process.

ACTIVITY/ DISCUSSION

Present Bloom's Taxonomy by using an analogy. For example, design an improvement in an automotive engine.

Knowledge is knowing the parts of the engine.

Comprehension is understanding the functions of the parts.

Application is putting the parts together.

Analysis is understanding the purpose and interrelationship of the parts.

Synthesis is putting the parts together in a new way to serve a new purpose.

Evaluation is deciding whether the new product is viable.

Continue the discussion until a thorough understanding of Bloom's Taxonomy is established. Provide additional examples of the different levels of Bloom's Taxonomy.

Divide the students into small groups. Have each group design an activity at one of the six levels of Bloom's Taxonomy. Have each group present their activity to the class.

Have the students create posters illustrating the six levels of Bloom's Taxonomy. For example, a ladder illustrating the six levels of the taxonomy.

CRITICAL THINKING

Thinking critically includes the skills of learning the difference between discussing, disagreeing, and arguing . . . how to examine an argument . . . the difference in an inference and an implication . . . separating emotional from logical thinking . . . and much more. It is well documented that critical thinking is teachable . . . and that the skills are sharpened by practice. Unfortunately, schools continue to focus most of their efforts on memorization and neglect teaching ways to analyze the learned information.

This is only an introduction to critical thinking. However, students will begin to recognize the elements of critical thinking . . . to notice common errors in reasoning . . . and to apply their learned skills in an independent study of propaganda techniques.

SHERLOCK HOLMES, I PRESUME

STUDENTS DISCUSS AND DEFINE "CRITICAL THINKING".

OBJECTIVE *The students will*

understand nine skills of critical thinking.

ACTIVITY/ DISCUSSION Write the words "critical thinking" on the board and invite students to define what critical thinking is. Guide the discussion to the concept that critical thinking is *not* finding fault with something. After the topic has been thoroughly discussed, write the following elements of critical thinking (from ***Critical Thinking*** by Anita Harnadek, Midwest Publications) on the board.

A CRITICAL THINKER:

1. Is open-minded about new ideas.
2. Does not argue about something when s/he knows nothing about it.
3. Knows when more information is needed.
4. Knows the difference between a conclusion which *might* be true and one which *must* be true.
5. Knows that people have different ideas about the meanings of words.
6. Avoids common mistakes in one's own reasoning.
7. Questions everything which doesn't make sense.
8. Tries to separate emotional thinking from logical thinking.
9. Tries to build up a vocabulary so that s/he can make his/her own ideas clear to other people.

ELEMENTARY, MY DEAR WATSON!

STUDENTS IDENTIFY AND ANALYZE THE ELEMENTS OF CRITICAL THINKING IN VARIOUS DIALOGUES.

OBJECTIVE

The students will

recognize the elements of critical thinking skills in daily exchanges.

ACTIVITY/ DISCUSSION

The following are examples for students to read and determine if the person is thinking critically or not. Have students decide *whether the person seems to be thinking critically,* and *why they think their statement is right.* (Refer back to the list of Elements of Critical Thinking.)

	Application Exercises	Answers
1.	John read a book which used a lot of words he didn't understand. He did not bother to look up the words in a dictionary. John thought that the author must be pretty smart to use words like that, so he decided that the author must be right about what he said in the book.	No. (See items 3, 4, 7, 9 on page listing the nine lements of critical thinking.)
2.	John read in one book that all airplanes have only two wings, and he read in another book that some airplanes have four wings. John figured that nothing false would be printed in a book, so he thought that both statements were true.	No. (See items 3, 6, 7.)
3.	John learned that some people connected with politics were sentenced to prison. He read the official records of the trials and decided that, based on these records, the sentences were fair.	Yes. (See item 3.)

Exercises continued	Answers
4. Same as problem 3, and John also came to the conclusion that all people involved in politics deserved jail sentences.	No. (See items 4, 6.)
5. Betty: "Transportation in the big cities is really a mess. Why don't engineers come up with moveable sidewalks so that people could go places without some kind of vehicle to carry them?"	No. (See items 1, 2, 3, 4.)
6. Yoshie: "Dave is really a good student, isn't he? He gets nearly all A's." John: "Naw, he's not so good. He gets A's all right, but he studies like crazy."	No. (See item 5.)
7. Kathy: "How come you let Charlie get away with telling you that you acted like a 5-year-old? If anyone talked to *me* like that, I'd really tell him off!" John: "I wondered why he said that to me, so I asked him. I didn't agree with the reasons he gave, but I found out why he said it. I figured that made more sense than just yelling at him about it."	Yes. (See items 1, 3, 5, 7, 8.)

ILLOGICAL, MY DEAR WATSON

STUDENTS DEFINE AND IDENTIFY FOUR COMMON ERRORS IN REASONING.

OBJECTIVE

The students will
understand and recognize four common errors in reasoning.

ACTIVITY/

Explain that there are four types of common errors in reasoning that will be addressed in this unit. The following provides a definition of each and application exercises.

Circular reasoning: This is when someone comes to a conclusion which is logically the same as a premise. Another way to define circular reasoning is when someone tries to prove something by assuming ahead of time that it is already true.

Read aloud the following application exercises. Have the students indicate whether or not circular reasoning is being used.

Application Exercises	Answers
1. You can't always judge a book by its cover. That's because a cover is not something by which you can judge a book.	Circular
2. You can't always judge a book by its cover. That's because the cover may be very different from what's inside the book.	Non-circular
3. People with big feet are often clumsy, but that's because people with big feet are often lacking in physical grace.	Circular

Exercises continued	Answers
4. You should avoid all forms of contact with her, because you shouldn't have anything to do with her.	Circular
5. It doesn't make any difference to me whether you believe me or not, because I don't care one way or another whether or not you believe me.	Circular
6. Development of solid foundations of reasoning is essential to the proper education of a person. Therefore, if someone is to be educated properly, then s/he must at least acquire a thorough knowledge of the basics of reasoning.	Circular

"Proof" by selected instances: This is when someone comes to a general conclusion about all things of a certain kind but has not observed all things of this kind.

Identify the kind of faulty reasoning being used (circular reasoning or "proof" by selected instance).

Application Exercises	Answers
1. I know I'm no good at foreign languages because I've tried to learn two of them so far and have had a hard time with both of them.	"Proof" by selected instance
2. You are probably unaware of what I am about to tell you, but that's because it is unlikely that what I am about to tell you is something you already know.	Circular reasoning
3. There is hunger in the United States, China, Brazil, Egypt, and Spain, so there is hunger in every country of the world.	"Proof" by selected instance

Exercises continued	Answers
4. My mother can raise any kind of house plant. You should see all the plants she has — philodendron, ivy, African violet, begonia, geranium — and every one of them is beautiful.	"Proof" by selected instance

Avoiding the question: This is when someone understands the question but doesn't answer the question.

Identify the kind of faulty reasoning used (circular reasoning, "proof" by selected instance, avoiding the question). If the reasoning is not faulty, answer "not faulty".

Application Exercises	Answers
1. Patrick: "Sis, why was I named Patrick?" Sis: "Why ask *me*? Ask mom or dad."	Avoiding the question
2. Patrick: "Mom, why was I named Patrick?" Mom: "Ask your father."	Avoiding the question
3. Patrick: "Dad, why was I named Patrick?" Dad: "Because that's the name you were given."	Circular reasoning
4. Patrick: "Grandma, why is the sky blue?" Grandma: "I don't know."	Not faulty
5. Patrick: "Auntie, why is the sky blue?" Auntie: "Because when the light comes down from the sun and bounces off everything else and gets thrown back up to the sky, blue is the only color that's left."	Not faulty
6. Patrick: "Laree, will you go out with me tonight?" Laree: "Get lost!"	Not faulty

Special pleading: This can take two forms. In one form it is where an individual justifies their actions but indicates that it is not all right for the other person to act that way, even though the conditions are the same. In its second form, it states that a person can act in two opposite ways and call them both okay, even though the conditions are the same each time. In summary, a person is using special pleading when they do not apply their line of reasoning in the same way all the time.

Identify the kind of faulty reasoning being used (circular, "proof" by selected instance, avoiding the question, special pleading). If the reasoning is not faulty, then answer "not faulty".

Application Exercises	Answers
1. Salvatore: "I don't think you ought to spread stories like that, even if they're true. They don't do anyone any good, and a lot of people get hurt." Lawrence: "You told me about the same kind of deal last week, remember?" Salvatore: "Yes, but you asked me about it, and I told you because I thought you wanted to know."	Special pleading
2. In a recent survey of college students, 80% of the students said that the government has no right to interfere with their personal conduct as long as that conduct isn't harming anyone else; 52% said that one of the duties of elected representatives is to pass legislation which is for the individual's own good.	Special pleading
3. X Company gives discounts on its products to its employees but not to the general public.	Not faulty
4. "It's okay with me if that cashier short-changes people, as long as she doesn't do it to me!"	Special pleading

Glittering Generality, My Dear Watson

STUDENTS IDENTIFY THE PROPAGANDA/PERSUASION TECHNIQUES OF VARIOUS EXAMPLES READ BY THE TEACHER.

OBJECTIVE

The students will

be able to define the propaganda/persuasion techniques of: **bandwagon, repetition, transfer, testimonial, exigency, free and bargain, glittering generality**.

be able to apply propaganda techniques to common situations.

ACTIVITY/ DISCUSSION

Tell the students that propaganda can sabotage critical thinking. Write the word "propaganda" on the board. Invite students to define it. Encourage one or two students to locate propaganda in the dictionary and share the definition. Guide the definition of propaganda to state that it is any rumor, idea, or fact which is spread in order to convince someone of something . . . that it may be truthful or not, and is often one-sided.

Lead a class discussion on the concept of propaganda, beginning with the question: ***Is propaganda ever truthful?*** Discuss with students, for example, the techniques used by Mao to persuade the peasant people to participate in his health care plan to *keep healthy*. He used propaganda techniques to spread the word of good health. He encouraged people to take more care in washing food before eating. Ask students if that is a "good" use of propaganda/persuasion techniques. Continue to stimulate discussion by asking questions similar to the following: ***Is propaganda ever one-sided? Can we avoid propaganda? Should we avoid propaganda? Is propaganda harmful?*** Ask students to *list examples of propaganda techniques* that they have encountered.

The following activities are designed to illustrate the various techniques of propaganda. Read the "**Application Exercises**" to the class. First, define the particular technique; then, read the examples and ask for application.

APPLICATION EXERCISES

TYPES OF PROPAGANDA/PERSUASION TECHNIQUES

Bandwagon: This propaganda technique uses the "join the group" approach. The bandwagon technique may be used to make the person think that if they don't go along with it they are "not with it" or not one of the group. For each problem, have students indicate whether or not "bandwagon" is being used.

Application Exercises	Answers
1. **Telephone canvasser**: "This is the X Home Improvement Company calling. We know that your home is not a new one and that it probably needs some work done on it. We've been doing extensive home improvement work in your area recently, and several of your neighbors are having us in to do work on their homes now. We wondered if we might come to see you while we're in your neighborhood and give you a free estimate on the cost of doing any improvements you have in mind?"	Yes
2. **Teacher**: "We're a little behind where we should be at this point, so over the Christmas vacation, I'd like to have you read pages 175-190 and do the exercises included in those pages." **Student**: "Hey, whaddaya trying to *do* to us? Nobody *else* gives us homework over Christmas vacation. Some of the other teachers were going to give us homework, but they changed their minds and told us to get a good rest and then we'd catch up when we got back. Can't we do that in this class, too, please?"	Yes
3. **TV Commercial**: "This offer expires at midnight tomorrow! Don't miss the opportunity of a lifetime! Order NOW!"	No
4. **Advertisement**: "Make your home the showpiece of your neighborhood. Call us today for a free estimate on remodeling your home!"	No

Repetition: This propaganda technique repeats a word, phrase, sentence, or thought in the hope that it will be remembered after the message has been read or heard. Indicate whether the propaganda technique used is bandwagon, repetition, a combination of both, or neither.

Application Exercises	Answers
1. "For a sparkling glow, for a sparkling smile, for sparkling teeth — use SPARKLE toothpaste!"	Repetition
2. "You don't mean that! After all you've been through! You're not serious. You've worked too hard to quit now. You're just saying that because you're discouraged now, but you'll feel differently about it after a good night's sleep. You'll change your mind, I know."	Repetition
3. "Join the group of neighbors who've called us! Join the group of friends who've called us! Join the group! Call us!"	Repetition/ Bandwagon
4. "Make your home the showpiece of your neighborhood! Call us today for a free estimate on remodeling your home!"	Neither
5. "This offer expires at midnight tomorrow! Don't miss the opportunity of a lifetime! Order NOW!"	Neither

Transfer: This propaganda technique is when the advertisement or speaker hopes to get the viewers' feelings about one thing transferred to another. Identify which propaganda technique is being used.

Application Exercises	Answers
1. "The excitement of Paris! The elegance of the Taj Mahal! The mystery of the Orient! You'll know how devastating you can *really* be, only if you're daring enough to try EXOTIC SCENT!"	Transfer
2. "My opponent supports federal subsidies to farmers, federal aid to schools, a federally-funded program for guaranteed minimum income, and federal regulations for interstate commerce. These things, my friends, are exactly the things supported by the communists who have secretly wormed themselves into our government! Communist Russia stated years ago that communism would stamp out democracy! And how can we keep it from happening if we are unthinking enough to elect members of the Communist Party to our Congress? We can't! So wake up, fellow Americans! Vote against my opponent! A vote for me is a vote against communism!"	Transfer

Testimonial: This propaganda technique uses a famous person or a person in a position of prestige that speaks in favor or against a product or idea. Indicate which propaganda techniques (repetition, bandwagon, transfer, testimonial) are being used. The exercises may contain more than one technique.

	Application Exercises	Answers
1.	The announcer says, "What do *you* think about SPRAY-ON rug shampoo, Arnie? Arnaldo Astronaut, Spain's famous astronaut says, "I think SPRAY-ON is the best rug shampoo I've ever used. I think everyone should try it."	Testimonial
2.	The caption over the picture says, "Dr. Hsu, Chairman of the College of Engineering at Famous University, is happy about our new design. We think you will be too." The picture shows Dr. Hsu smiling with one hand on the product advertised.	Transfer

Exigency: This is a propaganda technique used to make the consumer think they must take action within a definite (usually short) time period. Indicate which propaganda techniques are being used.

	Application Exercises	Answers
1.	"This offer expires at midnight tomorrow! Don't miss the opportunity of a lifetime! Order NOW!"	Exigency
2.	"Inflation is raising remodeling costs at a never-before-seen rate! A $500 remodeling job this month might cost you $600 two months from now and $1,000 a year from now! If you have remodeling to be done in your home, don't wait until later when you may have to pay twice as much. Call us TODAY for a free estimate on *your* remodeling job!"	Repetition, Exigency
3.	Big City's television shows are interrupted by a special bulletin: "Half an hour ago, a devastating tornado struck Midvale, just 20 miles from Big City. Scores of people were killed, and hundreds, maybe thousands, were injured. Many of the injured have suffered huge losses of blood. The blood will be completely consumed within two hours. The Red Cross has issued an urgent request to the public for immediate donations of blood of all types."	Exigency

Free and bargain: The free technique tries to make the consumer think that they will get something for free. Bargain assumes the consumer will pay something, but tries to make them think that what they will get is worth more than they paid for it. Indicate which propaganda technique is being used.

Application Exercises	Answers
1. "Make your home the showpiece of the neighborhood! Call us today for a free estimate on remodeling your home!"	Free
2. "Let us send the FORCE SCREEN MACHINE to you for a free, 10-day trial. Use it as much as you like for 10 full days, and, if you're not absolutely delighted with it, just return it to us undamaged, postage prepaid, at the end of the 10 days and owe us nothing. Orders will be filled according to their postmarks, and we can't guarantee how long the FORCE SCREEN MACHINE will be available, so send us *your* order TODAY!"	Exigency
3. "Call us now and ask for a copy of our free brochure explaining these things in detail."	Free (not counting the cost of the phone call)
4. "Our weekend special is a KELTAG washer and dryer combination for the amazing low price of only $________! You'll never again see an offer like this one, so come in to any of our conveniently located stores either tomorrow or Sunday and take advantage of this week's fantastic weekend special!"	Exigency, bargain
5. "The Helping Hand Society of Big City issued a public appeal today for volunteer drivers. 'We need anyone who has a car and two or three hours a week to spare,' said Ms. Tarkle, founder of the Helping Hand Society. 'We know of so many people who need medical treatment but have no transportation enabling them to get it. The volunteers would not be paid any money, but the gratitude of the people they help and the knowledge that they have helped someone else is more than enough.'"	Bargain

Glittering generality: This is a propaganda technique that uses words that draw the consumer's attention. The speaker uses words or phrases which are attractive but with specific details omitted. Each problem is an example of "glittering generality". Identify the phrase or sentence which should be questioned.

Application Exercises

1. "SUPER BRUSH lasts a lifetime! Get one today!"

2. "A leading laboratory[1] reports[2] that there was a statistically significant[3] difference between the health of dogs which ate only DOGBURGER dog food and dogs which ate only other leading brands[4] of dog food, with the DOGBURGER-fed dogs being the healthier."[5]

Answers

1. [1]What kind of lifetime — human, housefly, or what?

2. [1]What's "leading"? What's the name of the laboratory? [2]How can I get a copy of the complete report? To whom did the laboratory report...to you, to a respectable scientific journal, to...? [3]Statistically significant at what level of probability? If the level was .999, then I'm unimpressed. [4]What's "leading"? Exactly which other brands were used? [5]Was this a scientifically controlled experiment? For example, were the DOGBURGER dogs matched for breed, age, weight, temperament, and general health with the "other leading brands" dogs? Was each dog and its control treated the same throughout the experiment? Were they living under identical conditions of housing and care? Were they fed equal amounts of food? Was each fed as often as the other? What variables were involved?

AUTHOR'S NOTE: **"Elements of Critical Thinking"**, as well as the activities on pages 9-20 are from ***Critical Thinking*** by Anita Harnadek, Midwest Publications. Ms. Harnadek's book is an invaluable resource for any classroom exploring critical thinking. The exercises in ***CHRYSALIS*** only represent a small portion of her total book. Used with permission.

DO IT YOURSELF, MR. WATSON

STUDENTS CHOOSE AND COMPLETE A MINI INDEPENDENT PROJECT.

OBJECTIVES

The students will

analyze, evaluate, synthesize information from propaganda techniques.

take responsibility for their own learning by choosing and completing a mini independent project.

ACTIVITY/ DISCUSSION

In an effort to acquaint the students with independent study, listed on the folowing pages are ideas for mini independent projects.

Students need to understand: 1) They are responsible for creating one or more mini independent projects; 2) They need to study the suggested ideas; 3) They are encouraged to create their own ideas as well.

Provide students with a time limit in which they have to complete their projects. Allow class time as it will provide you with the opportunity to observe their independent study work habits.

Allow time at the conclusion of the study for sharing. Begin to introduce students to the many different ways in which they can share their project. This includes verbal/video presentations, simulations, and activities in which the entire class may participate.

IDEAS FOR MINI INDEPENDENT STUDY

1. Many ads are designed to change the attitude of the public in such areas as pollution, energy use, recycling, and public health. Find three ads showing examples of this type of advertising. Write a short paper indicating your opinion of each ad. Include what was good about it and how you might improve upon it. Create your own public service ad for something in which you believe.
2. Collect ten ads from one general field, such as automobiles, cosmetics, or cereal. List the most frequently used words in these ads. Create your own ad using these words. Discuss why you think these words are used so often.
3. Science and scientific words have a lot of prestige among advertisers. Find five advertisements and underline scientific names and secret ingredients used. With the help of a dictionary, see if you can write a definition for the five terms. Discuss why advertisers used these words when communicating with the general public.
4. Make up and describe the products that go along with each of the following slogans:
   - *Fly high with FINGERS*
   - *Sparkle up your day with SIZZLES*
   - *Leo the Lion loves KRUNCH KOOS, and you will, too*
   - *Start your day the ZIP way*
   - *When you think of sweets, think SWEETO*

   You might create print ads to go along with each of the slogans, showing the products *you* created.
5. Find ten examples of brand names and slogans where the name helps to describe the product, such as Arid Deodorant or Gleem Toothpaste. Discuss the choice of words. Make up your own brand names, describing the product, for dishwashing soap, car oil, floor wax, and shampoo.
6. Choose a general category of products, such as toothpaste, soap, cars, etc. Survey a minimum of fifteen people, asking the following questions or create your own:

   "What kind of ____________________ are you using?"
   "Have you used any other brands? Which ones?"
   "What made you choose this brand?"
   "Are you pleased with this product? Will you use it again?"

   Compile the data in graph form and present to the class.
7. Choose a print ad that appeals to you. Write up an analysis of why it appeals to you.
8. Create a poem using words, phrases, and sentences from ads. Make it a meaningful poem. It can be humorous or serious and it doesn't have to rhyme.
9. Find ten examples of sexism in advertising — where either males or females are being treated in a stereotypic way. You may use print ads or you may replicate ads seen on TV. Choose one of the examples of sexism and re-do it, removing the sexism.

10. Choose two totally different magazines, such as a news magazine and a "woman's" magazine. Tabulate the kinds of advertisement that you find in each. For example, possible categories of ads might be:

    food
    cars/car products
    cleaning products
    pet products
    cosmetic or health products
    banks/stocks/money
    public services
    alcohol
    cigarettes
    airlines

    Compile the data into tables or graphs.

11. Try writing a musical jingle like the ones used in commercials to advertise products. You might like to write a song to advertise candy bars, cars, cereal, or toys. After you have decided on the product, find or make up a melody and write words to go with it.

12. Automobile manufacturers like to use animal names for their products. They carefully choose names which cause the buyer to transfer the characteristics of the animal to the car. List eight cars named after animals and then list the characteristics of the animal to the car. Design a new car and assign it an animal's name. Discuss why you chose that animal.

13. Record some of the commercials you see on TV within one hour. Record the following data:

    date
    TV show
    propaganda technique(s)

    Present your findings to the class in graph form.

14. Design a commercial for TV and present it to the class (consider such visual gimmicks as costumes, setting, movement, facial expressions). Have the class identify propaganda technique(s) and gimmicks used.

15. Design a commercial for radio . . . tape it . . . and present it to the class. Consider such auditory gimmicks as sound effects, background sounds, creating a character by style of speech, vocal expression, use of music or jingles. Have the class identify propaganda technique(s) and gimmicks used.

For additional experience in Propaganda/Persuasion Techniques: Have students participate in a simulation advertising campaign. Provide students with a budget that requires them to choose between the type of media and propaganda techniques to be used in advertising a product, service, or agency that they created. Students present their advertisements to the class by videotaping TV commercials, recording radio commercials, and drawing their newspaper and magazine ads. At the conclusion of the presentations, the entire class can participate in identifying the propaganda/persuasion techniques used and provide critical input on the effectiveness of the advertising campaign.

CREATIVITY

The ability to think creatively is an essential skill in any society. Vital to effective problem solving as well as to the development of self, teaching students to think creatively must be encouraged in the school setting. A new mindset is needed, however, in order to nurture this type of development within the classroom.

Creative thinking is best developed in a non-authoritarian environment where there is a healthy attitude toward taking risks . . . challenging assumptions . . . and where students have opportunities to develop and apply creative thinking through self-directed learning. In this setting, students learn to acknowledge their own creative process. Over the past decade, research has indicated that certain skills inherent in the creative process are teachable. The model used in this section identifies four of the basic skills that are applicable to the creative process . . . fluency, flexibility, originality, and elaboration.

"Imagination is more important than knowledge." — Albert Einstein

STUDENTS DISCUSS THE IMPORTANCE OF CREATIVITY IN OUR SOCIETY AND THE CHARACTERISTICS OF FAMOUS CREATIVE PEOPLE.

OBJECTIVES

The students will

become aware of the fundamental need for creativity in our society.

become aware of the characteristics of creative people.

ACTIVITY/ DISCUSSION

Initiate a discussion suggesting that we live in a changing society which constantly calls for creative living. Have the students list ideas of what creativity is. Discuss why people create. Once students have a substantial list of ideas about creativity, ask them to close their eyes and imagine a world void of creativity. Then, share their imagined world.

Brainstorm famous creative people. Be sure Albert Einstein, Thomas Edison, Martin Luther King, Benjamin Franklin, and Isadora Duncan are included. List the characteristics that made these people creative. Give students an opportunity to define what attributes these creative people possess.

"It is the supreme art of the teacher to awaken joy in creative expression and knowledge."
— Albert Einstein

F^{2}OE

STUDENTS PARTICIPATE IN ACTIVITIES USING THE FOUR ELEMENTS OF CREATIVITY – FLUENCY, FLEXIBILITY, ORIGINALITY, AND ELABORATION.

OBJECTIVE

The students will
be able to define the four elements of creativity.

ACTIVITY/ DISCUSSION

Introduce students to the four elements of creativity – fluency, flexibility, originality, and elaboration. Write the elements on the board, defining each.

Fluency is: generating a quantity of ideas.

Define brainstorming as a process of generating many ideas. Explain that brainstorming usually has a specific time limit in which as many ideas as possible are generated. During this period, there should be no criticism of ideas.

Discuss the reasons behind these rules.

Have the students apply the skills of fluency by brainstorming a minimum of ten uses for an ordinary eraser. Allow three minutes. Write the list on the board and save.

Flexibility is: shifting from one thought category to another.

Explain that, just as an actor shifts from one thought category to another when portraying different roles, so does an individual when exercising flexibility in his/her creative thinking.

Display an upright container. Brainstorm uses for it. Turn the container upside down so it no longer functions as a container. Brainstorm uses for it now. Finally, turn the container on its side and brainstorm additional uses. Ask students how many times they shifted thought categories (three times). Point out the increased number of uses generated by shifting thought categories.

Originality is: producing unusual ideas.

In discussion, analyze the uses for an eraser. Look for ideas that are different, clever, and creative. Initiate a qualitative argument by attempting to discover the most original response. Discuss how people define originality differently and stress the necessity for respecting individual preferences.

Elaboration is: refining, expanding, and embellishing an idea, solution, plan, or product.

Have the students read the eraser list. Ask them to take one of the eraser ideas and elaborate. The final product should be a detailed diagram outlining parts and functions. Share the diagrams with the class.

"Creative behavior is necessary now and in the future. Creative action benefits the individual and his society."

Cindy Herbert, Susan Russell

VISUALIZATION VISUALIZATION VISUALIZATION

Visualization, the process of forming a picture within the mind is an invaluable tool for classrooms concerned with the development of thinking and feeling. The process of visualization enhances the creative process since it provides a link to the right hemisphere. Visualization is also effective in the building of positive self-concept and the realization of personal goals. Throughout ***Chrysalis***, opportunities are provided for the application of the visualization process. The process is helpful in focusing thoughts as well as in reducing tension and anxiety. More and more teachers are seeing the positive results of beginning each class with a visualization. Soon, the students are requesting a visualization prior to a test, a writing or art activity or before giving an oral presentation.

LEFT, RIGHT, LEFT, RIGHT — ABOUT FACE

STUDENTS VISUALIZE AND DESIGN POSTERS ILLUSTRATING THE FUNCTIONS OF THE RIGHT AND LEFT HEMISPHERES OF THE BRAIN.

OBJECTIVES *The students will*

define the left and right functions of the brain.

design a poster, illustrating the right and left hemisphere functions.

ACTIVITY/ DISCUSSION Introduce students to the corpus callosum, a thick nerve cable that cross connects the two hemispheres. Explain that the corpus callosum provides communication between the hermispheres and transmits learning and memory. Scientists have found that, in cases where the corpus callosum has been severed, the two hemispheres operate independently. Ask students to imagine what effects this may have on an individual's behavior or their outlook on the world.

List on the board the different functions the left hemisphere and the right hemisphere have.

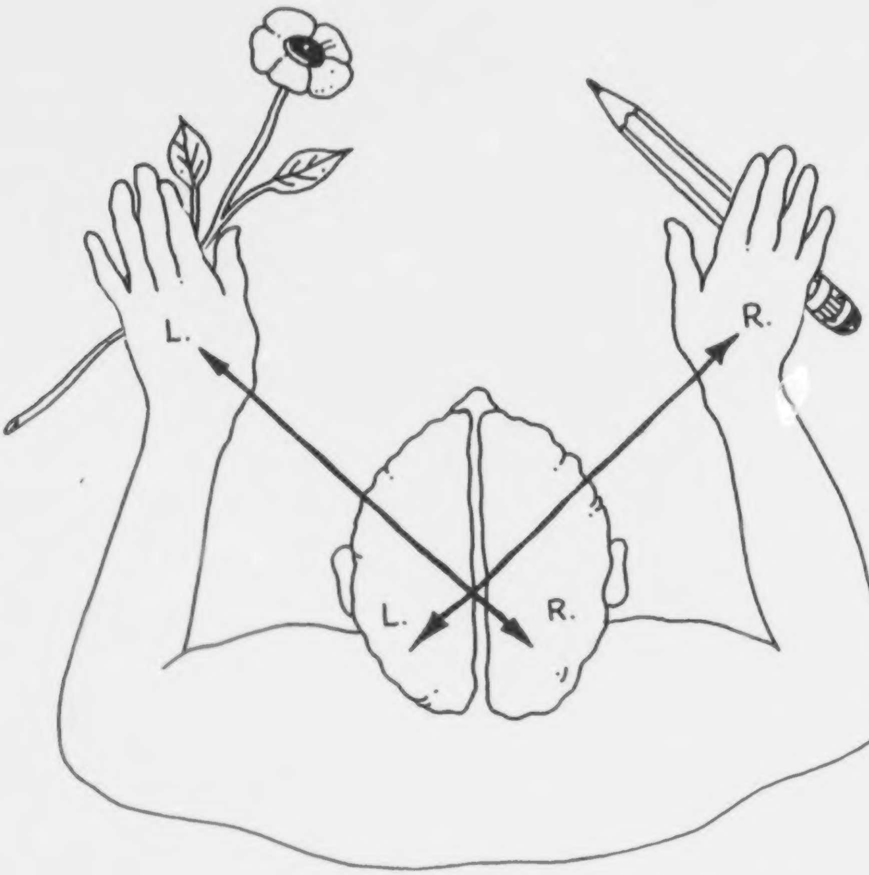
L	*R*
Logical thought	***Intuitive thought***
Plans step by step procedures	***Holistic sight***
Marks time	***No sense of time***
Formation of speech	***Imagery and visualization***

Ask students to close their eyes and image a bold **L**. Ask them to enlarge the **L** until it is as big as the Empire State Building . . . then as small as they can make it. In their mind's eye, ask them surround the **L** with left hemisphere activities, such as counting, telling time, and planning. Now, ask the students to visualize the curvey, flexible ***R***. Once again, ask them to enlarge the ***R*** until it fills the whole mind's eye and then to make it as small as possible. In their mind's eye, ask them to surround the curvy flexible ***R*** with right hemisphere activities, such as painting a picture, creating a poem, or seeing the world as one.

Now, ask students to switch back to the left, once again seeing the bold **L** and the related activities; then, back again to the curvy ***R*** and its activities. Do this a few times, switching at various intervals.

Have students design posters illustrating the functions of the left and right hemispheres.

Adapted from ***Drawing on the Right Side of the Brain*** by Betty Edwards. Copyright © 1979 by Betty Edwards. Adapted by permission of J.P. Tarcher, Inc., and Houghton Mifflin Company.


L.
R.
L.
R.

SEEING WITH THE MIND'S EYE

STUDENTS VISUALIZE THE RIGHT AND LEFT HEMISPHERES OF THE BRAIN.

OBJECTIVES *The students will*

define visualization.

practice various visualization techniques to understand the cross-over function of the left and right hemispheres of the brain.

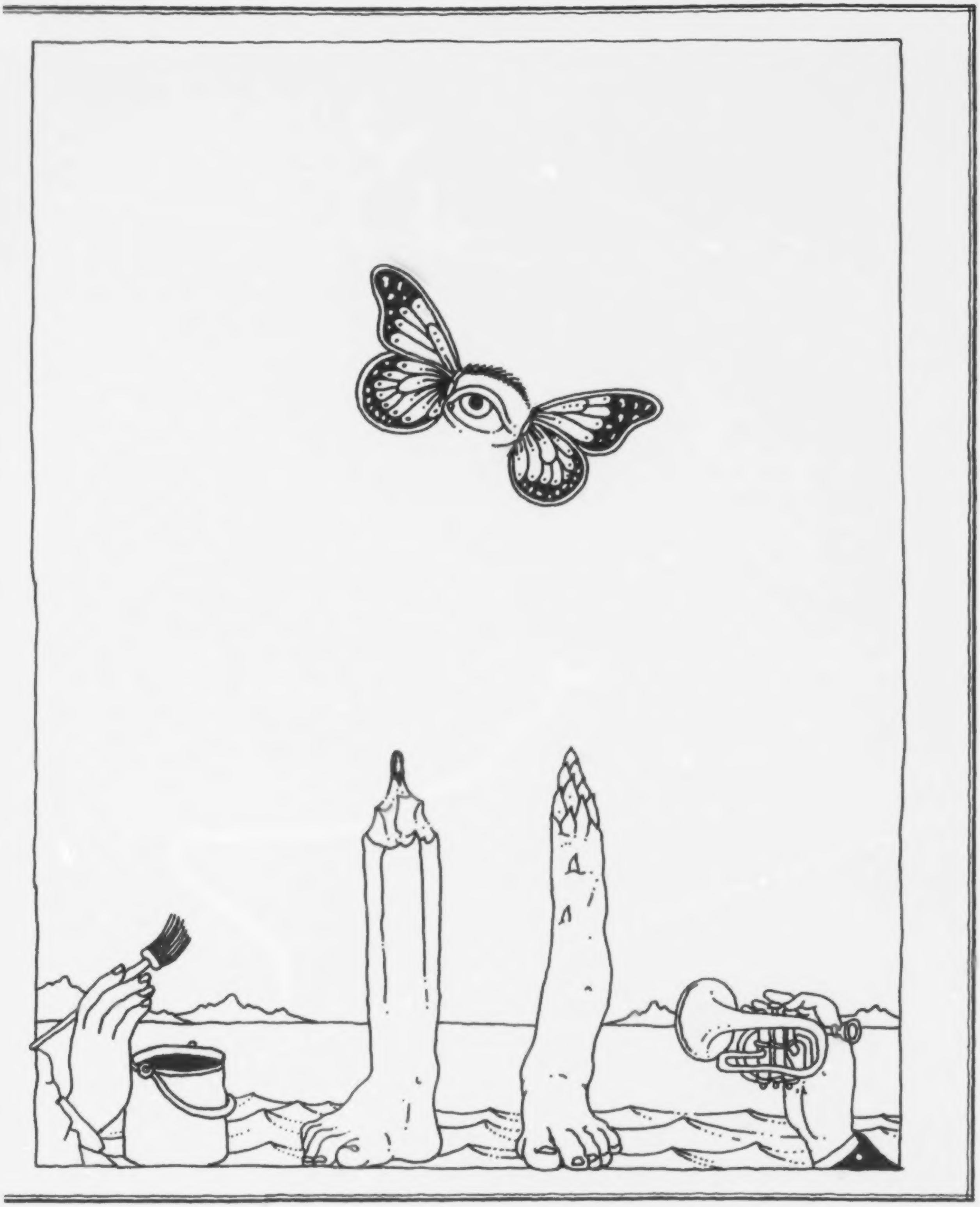
ACTIVITY/

Write the word "visualization" on the board. Ask students to locate the definition of visualization in the dictionary and share it with the class. (Essentially, the definition will state, " to form a picture in the mind.") Have students brainstorm various aspects of visualization. This list may include such things as: how an artist forms an idea for a painting; arriving at solutions for problems; and increasing an individual's self-image.

Show students a whole, shelled walnut. Ask them to observe closely the convoluted shape and how the walnut is divided in half. Explain that the walnut represents the human brain. Every brain is composed of two halves or hemispheres. The right hemisphere controls the left side of the body. The left hemisphere controls the right side of the body. Explain that, although the two halves may seem similar in task, they have two different functions, both equally important. The right hemisphere is responsible for the creative and intuitive functions in a person. The left hemisphere is responsible for logical and rational thought processes.

Ask the students to close their eyes and imagine a red string starting from the right hemisphere, going through the left side of the body, connecting everything on the left side to the right hemisphere. Ask them to imagine a blue string starting from the left hemisphere and connecting the right side of the body with the left hemisphere. Ask students to observe the whole crossed-over connections of the right and left hemispheres of the brain.

Adapted from ***Drawing on the Right Side of the Brain*** by Betty Edwards. Copyright 1979 by Betty Edwards. Adapted by permission of J.P. Tarcher, Inc., and Houghton Mifflin Company.



HAVE YOU EVER SEEN A BIRD WITH CAT FEET?

STUDENTS USE VARIOUS VISUALIZATION TECHNIQUES AND DISCUSSION TO UNDERSTAND THE SEVEN TYPES OF VISUALIZATION – MEMORY, IMAGINATION, DAYDREAMS/FANTASIES, HYPNAGOGIC/HYPNOPOMIC, DREAMS, VISIONS, AND AFTER IMAGES.

OBJECTIVE *The students will*

be able to define the seven types of visualization.

ACTIVITY/

Explain that closed-eye visual images are similar to open-eye perceptions. Visual images differ from open-eye perceptions because they are largely dependent on stored, rather than current, information. The synthesis that occurs is essentially the same. For greater depth, study open-eye perceptions and compare them to visual images. In open-eye perceptions, the ability to focus clearly on objects requires constant movement of the eyes. The same occurs when people visualize only then their eyes are closed. Have students experience this by having them observe a partner's eye movement when looking at something across the room. Compare with what happens when someone is dreaming or has achieved REM (Rapid Eye Movement) during sleep.

Listed below are the seven types of visualizations, with activities and items for discussion.

Memory . . . images conjured through various memories within an individual's experience. Ask students to image their bedroom as they left it this morning.

Imagination . . . a visualization experience stimulated by an individual's imagination. These images may contain elements of past perceptions that have been rearranged or slightly altered. Have students close their eyes and image a bird with cat feet, a flying car, a river running up a mountain, and an upside-down rainbow.

Daydreams/fantasies . . . images that are a combination of both memory and imagination, i.e., past experiences or the projection of future experiences. Ask students to image themselves laying on a sunny beach or sitting in a lush, green meadow. Encourage them not only to see the image but to actually feel the sun beating down on them or the feel of the soft, green grass; hear the waves break on the shore; or see the birds in the sky.

Hypnagogic/hypnopomic . . . images that occur preceding sleep (hypnagogic) and before becoming fully awake (hypnopomic). These experiences are many times vivid enough to seem real, but are generally recognized as an internal image. Ask students to share any experiences they have had with hypnagogic or hypnopomic images.

Dreams . . . images that occur while the body is asleep and has achieved REM (Rapid Eye Movement). Dreams are a combination of familiar and dissimilar images that may or may not have actually occurred. In dreams, time and space are basically nonexistent. Ask students to relate experiences of dreams they have had. This very easily can lead into a lengthy discussion so you may want to establish a time limit prior to beginning.

Visions . . . images where the individual actually believes the event is occurring in the outer or "real" world. These may or may not be drug induced. Ask if any students have experienced a vision and, if so, ask if they would share the experience with the class.

After images . . . images that typically occur after looking at a bright object against a dark background, such as a bolt of lightning. If a person closes his/her eyes right after the flash, s/he will continue to see light flash against a dark background.

Adapted from ***Seeing With The Mind's Eye***, by Nancy and M. Samuels. Published by Random House Publishing Co., New York, 1979.

For more information on "visualization", see ***The Peaceable Classroom*** by Harmin & Sax and ***The Second Centering Book*** by Hendricks and Robert.

"Every mind is different and the more it is unfolded, the more pronounced is that difference."
— Emerson

STOP, LOOK, LISTEN

STUDENTS PRACTICE THE PROCEDURES NECESSARY IN THE VISUALIZATION PROCESS.

OBJECTIVE *The students will*

be able to apply the conditions necessary to the visualization process.

ACTIVITY/ DISCUSSION Visualization is a process that requires the procedures listed below. Application exercises are provided for steps 3, 4, and 5. List each of the procedures on the board, then ask students to practice the task and share their experiences with the class.

Step 1 ***Quiet, peaceful place with little external stimuli.***

Step 2 ***Ability to stop the mind from its everyday activities and wanderings, such as "What's for lunch?".***

Step 3 ***Ability to relax the whole body.*** This can be achieved through various relaxation techniques. One that works well is to have students take ten breaths, concentrating on each one. Ask students to continue their breathing and direct their attention to their feet. Ask them to relax their feet. Gradually work up the whole body, ending at the top of the head. Their bodies should be completely relaxed.

Step 4 ***Ability to concentrate.*** Ask students to direct all their concentration to their pencil for one minute. After the one minute period, ask how many minds wandered. Explain to students that this is an extremely difficult task and usually can only be mastered after diligent practice.

Step 5 ***Ability to see.*** Ask students to once again direct their attention to their pencils. Have them think first of what it is used for, then have them shift from what the pencil is used for to what else it could be used for. Examples: What other uses might it have? What else does it look like?

(The next time you go to the playground, encourage your students to *see* the playground. Ask them not only to look, but to really see, allowing no intruding thoughts in, such as thoughts directed to the past or future or making judgements of what they see.)

FEELY BAGS? SCHOOLS? BAROQUE MUSIC?

STUDENTS WILL APPLY VISUALIZATION TECHNIQUES TO EXTERNAL STIMULATION.

OBJECTIVE *The students will*

feel objects in a bag and attempt to visualize the object, then illustrate it.

design the ideal school based on visual images.

listen to baroque music and illustrate the images the music evokes.

ACTIVITY/

Feely bags. Place a variety of objects, such as seashells, pieces of lava or wood, and kitchen utensils, in separate paper bags; enough so each student in the class has one. Students are to feel the object and try to image it in their mind. After they have an image, ask them to draw a picture of it. Have them compare the object with their picture to see how closely the image in their mind's eye relates to the actual object.

Designing a school. Explain to students that architects use visualization techniques in order to create designs for houses and buildings. Discuss with students what other professions may use similar techniques.

Have the students relax their bodies and close their eyes. Using their imagination, have them visualize the design of a perfect school. When the image is concrete, ask them to draw a diagram and provide a written page on the reason for such a design.

Baroque music and art. Play a piece of music that evokes some sort of feeling, i.e., Pachebel, "Canon in D Major". Ask students to listen to it with their eyes closed, observing the images that form in their mind's eye. When they have a concrete image, ask them to draw it. Share with the class, discussing the similarities and differences of each student's perception of what the music suggested to them. Discuss why people have different perceptions.

When I examined myself and my methods of thought, I came to the conclusion that the gift of fantasy has meant more to me than my talent for absorbing positive knowledge. – Albert Einstein

INDEPENDENT STUDY

STUDENTS CHOOSE AND COMPLETE AN INDEPENDENT ACTIVITY.

OBJECTIVES *The students will*

analyze, evaluate, and synthesize information from the visualization section.

take responsibility for their own learning by choosing and completing an independent activity.

ACTIVITY/ DISCUSSION On the following page are ideas for independent activities. Encourage students to create their own ideas for study. Allow class time for the sharing of the projects.

IDEAS FOR INDEPENDENT STUDY

1. Report on left/right brain studies. Be prepared to conduct a class discussion.

2. Listen to various styles of music, such as jazz, classical, and rock and roll. Draw pictures that represent the images seen for each different style of music. Compare the pictures and discuss the similarities and differences. Hypothesize why different music evokes different images.

3. "In what ways can warmth be seen? In what ways can silence be heard? In what ways can harmony be felt?" (From ***Sunflowering*** by Bob Stanish. Used with permission.) Read the above questions and answer each in essay form. Before beginning, take a relaxed moment and image each question in your mind's eye to help you arrive at your answers.

4. Collect seven days of data on your dreams. After you have collected your data, analyze it to determine whether any patterns exist. Write a brief summary telling what you learned about your sleeping and dreaming patterns.

Data Collection Chart

	M	TU	W	TH	F	SA	SU
Time/asleep							
Time/awoke							
Total sleep time							

Sleep well? Terrible 1 2 3 4 5 Great

Description of Dreams

Mon.

Tues.

Wed.

Thurs.

Fri.

Sat.

Sun.

5. Research various drugs that cause the user to hallucinate. Discuss in your paper the effect these drugs have on an individual, as well as the properties in them that cause an individual to hallucinate.

CREATIVE PROBLEM SOLVING

Creative Problem Solving is a specific learned technique for defining a real problem, understanding why the problem exists, clarifying contingent problems, considering all possible solutions and planning the solution. Students will learn to implement the process as outlined in ***CPS For Kids***, by Eberle and Stanish. Students will learn that they can systematically approach problems and find solutions at both a personal and global level. Aspects of visualization, goal-setting, higher order thinking, and creativity are all skills put to use in the problem solving process.

USING CPS TO SOLVE PERSONAL PROBLEMS

STUDENTS APPLY THE PROBLEM SOLVING PROCESS TO A PERSONAL PROBLEM.

OBJECTIVES *The students will*

understand the problem solving process.

be able to apply creative problem solving techniques to a personal problem.

ACTIVITY/ DISCUSSION Introduce the subject of problem solving by writing the following steps on the board, discussing each. Explain to students that they will apply these steps to solving a personal problem.

Step 1 ***Identify the problem.*** This is the ability to increase one's awareness in realizing that efforts and situations can always be improved. This is the first step to identifying the problem. Ask students to think of a situation or effort in their life that is in need of improvement.

Step 2 ***Fact-finding.*** Finding facts increases the understanding of why a problem exists. In this step, students list questions that need to be answered before they can solve the problem. For example, a question might include: "Who else does this problem involve?"

Step 3 ***Problem-finding.*** This step includes brainstorming problems related to the situation. Problem-finding includes reviewing the facts, viewing the situation from a variety of perspectives, identifying sub-problems, and deciding which problem, if solved, could clear up the other problems. It is often easier to attack the problem if it is written in question form. For example: In what ways might I improve my grades in math?

Step 4 ***Idea finding***. This step consists of brainstorming possible solutions to the identified problem. Brainstorming involves generating many ideas, combining ideas, withholding criticism, and elaborating upon ideas. The SCAMPER Checklist, located on the next page, can be used to stimulate creative and imaginative ideas. Stress to students that the more ideas generated, the better. This provides for more options, which is the art of creative problem solving.

Step 5 ***Solution finding***. It is important to evaluate which solutions might be best for solving your problem. Choose the best five solutions generated in Step 4. List the five solutions in rank order and evaluate each, based on a scale of 1-5. One should represent the poorest idea, with five representing the best idea.

Step 6 ***Acceptance finding***. Once the solution has been arrived at, how to carry out the solution becomes important. This is the point at which the questions, *Who? What? Where?* and *How?* should be addressed. Acceptance finding includes creating a step-by-step implementation plan that lists who will participate, a timeline, and what resources are needed.

Complete the discussion by asking if there are any additional questions. If not, ask students to complete the "**Solving Personal Problems**" **Worksheet**. Explain that the purpose of the worksheet is to have each student solve a personal problem. (Emphasize that they will not be required to share unless they choose to do so.)

Adapted from ***CPS For Kids***, by Bob Stanish and Bob Eberle. Published by D.O.K. Publishers, Inc., Buffalo, New York, 1980. Used with permission.

SCAMPER LIST

Below you will find a checklist to refer to when brainstorming. The **SCAMPER** (Eberle, 1971) checklist is an adaptation of the work of Alex F. Osborn (1963).

SUBSTITUTE	What could you substitute? What might you do instead? What would do as well or better?
COMBINE	What could you combine? What might work well together? What could be brought together?
ADAPT	What could be adjusted to suit a purpose or condition? How could you make it fit?
MODIFY **MAGNIFY** **MINIFY**	What would happen if you changed form or quality? Could you make it larger, greater, or stronger? Could you make it smaller, lighter, or slower?
PUT TO OTHER USES	How could you use it for a different purpose? What are some new ways to apply it? What does it suggest?
ELIMINATE	What could you subtract or take away? What could you do without?
REVERSE	What would you have if you reversed it or turned it around? Could you change the parts, order, layout, or sequence?

From *CPS For Kids*, by Bob Eberle and Bob Stanish. Published by D.O.K. Publishing, Inc., 71 Radcliffe Road, Buffalo, NY, 1980. Used with permission.

SOLVING PERSONAL PROBLEMS

WORKSHEET

Name ______________________

Apply the steps of the problem solving process to solving a personal problem:

Step 1 **Identifying the Problem**

Decide on a situation that needs improvement and write it in the space provided below.

Situation ____

____

____

Step 2 **Fact Finding**

List five questions you need to answer before you can solve your problem:

1. ____
2. ____
3. ____
4. ____
5. ____

Step 3 **Problem Finding**

On a separate sheet of paper, brainstorm all the problems surrounding the situation in need of improvement. Choose the major problem and write it in the space provided below.

MAJOR PROBLEM: ______________________________

Step 4 **Idea Finding**

Brainstorm a list of possible solutions to your major problem and list them below. Generate five or more ideas. The more options you have, the better!

Possible Solutions

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________
7. ______________________________
8. ______________________________
9. ______________________________
10. ______________________________

Step 5 **Solution Finding**

Choose the five best solutions generated in Step 4. List the five solutions below. Judge each solution using the rating scale.

IDEA RATING SCALE

Rate each idea by circling a number on the 1-5 Idea Rating Scale.

SOLUTIONS	POOR IDEA 1	2	FAIR IDEA 3	4	GOOD IDEA 5	TOTAL
1.						
2.						
3.						
4.						
5.						

Step 6 **Acceptance Finding**

List below all the resources, ideas, and things you need to go to carry out your solution.

1. ________________________________
2. ________________________________
3. ________________________________
4. ________________________________
5. ________________________________
6. ________________________________
7. ________________________________
8. ________________________________
9. ________________________________
10. ________________________________

IMPLEMENTATION PLAN

List five ideas to carry out your solution.

1. ________________________________
2. ________________________________
3. ________________________________
4. ________________________________
5. ________________________________

Adapted from ***CPS For Kids***, by Bob Eberle and Bob Stanish. Published by D.O.K. Publishing, Inc., 71 Radcliffe Road, Buffalo, New York, 1980. Used with permission.

Goal Setting, that process of looking ahead to a desired way of being or attainment of some physical item, is more and more realized as perhaps the only way of "getting there". Brain research suggests that we must first visualize the goal . . . even though unconsciously . . . before we can move toward it. Through implementation of the steps of the goal setting process, students define the major goal and then identify the specific steps necessary to the achievement of that goal. As students internalize this skill, they master a tool valuable in a multitude of life situations . . . from hitting a tennis ball to reaching an academic dream.

[GOAL SETTING]

CAN YOU CHANGE?

STUDENTS PRACTICE ESTABLISHING GOALS USING SPECIFIC TIME LIMITS, MEASURABLE AMOUNTS, OR SET STANDARDS OF PERFORMANCE.

OBJECTIVE

The students will

understand the process of goal setting.

ACTIVITY/ DISCUSSION

Agree on a class definition of goals. (Refer to a dictionary, if necessary.) Discuss the various forms of goals:

Type	Example
Personal	I will spend more time reading than watching TV for a one-week period.
Academic	I will complete all assigned homework for the next two weeks.
Career	I would like to go to college to become a doctor.

Have students brainstorm additional examples of goals. Lead a discussion on the factors of measurable goal setting. Include specific time limits, measurable amounts, or a set standard of performance.

Choose three goals and discuss the three examples in terms of specific time limits, measurable amounts, and set standards of performance. Have the students brainstorm additional goals which can be measured. Then, have the students discuss three goals in terms of their time limit, measurable amount, or set standard of performance.

BET YOU CAN!

STUDENTS WRITE ONE PERSONAL GOAL AND COMPLETE THE GOAL SETTING SHEET.

OBJECTIVE *The students will*

be able to write a personal goal containing a specific time limit and a measurable amount or set standard of performance.

ACTIVITY/ DISCUSSION Lead a class discussion about problems that prevent people from reaching their goals. The class discussion might include such blocks as fear of failing, fear of other people's opinions, procrastination, and illness. Choose one possible block and ask for suggestions regarding who or what could help.

Have students complete the **Goal Setting Sheet** provided on the next page. Ask students to share their goals with one another.

Refer back to these goals over the next month and, if possible, throughout the remainder of the school year. Provide time for discussion with an assigned goal partner.

"No trumpets sound when the important decisions of our life are made. Destiny is made known silently."
— Agnes DeMille, Choreographer

GOAL SETTING SHEET

Name ____________________

Write one goal which can be met within the school year. (Remember to have a measurable goal.)

1. Goal: ____

____

____

2. What could keep me from reaching this goal? (Check any that apply.)

_______ I don't really have the skills or knowledge that I need.

_______ I don't want it badly enough to work for it.

_______ I'm afraid I might fail.

_______ I'm afraid of what others will think.

_______ Others don't want me to reach my goal.

_______ The goal is really too hard to ever reach.

Some other reasons might be: ____________________________

____

____

3. What are some things I could do so these things won't keep me from reaching my goal?

____

____

____

4. Who can help me? (Name)	How can they help?
____________________	____________________________
____________________	____________________________

5. What are my chances of success?

_____ Very Good _____ Good _____ Fair _____ Poor _____ Very Poor

From *Project ASSIST, An affective education program in the areas of self concept, interpersonal relations, and feelings.* Developed by Pat King, Issaquah School District No. 411, 1980. Used with permission.

GETTING THERE

STUDENTS DESIGN THEIR PERSONAL "LADDER OF SUCCESS", PROVIDING SPECIFIC STEPS TO MEET THEIR GOAL.

OBJECTIVE

The students will

be able to list and sequentially arrange the necessary steps to meet their goals.

understand that change, as goal setting, cannot occur without an awareness of the process of change.

ACTIVITY/ DISCUSSION

Ask students, "What will happen if you don't understand the steps needed to realize your goal?"

Using an example of a goal, brainstorm possible steps needed. Then, divide the students into groups so they may sequentially order each of the steps. Have each group share the results of the sequence, as well as the reason behind their decision.

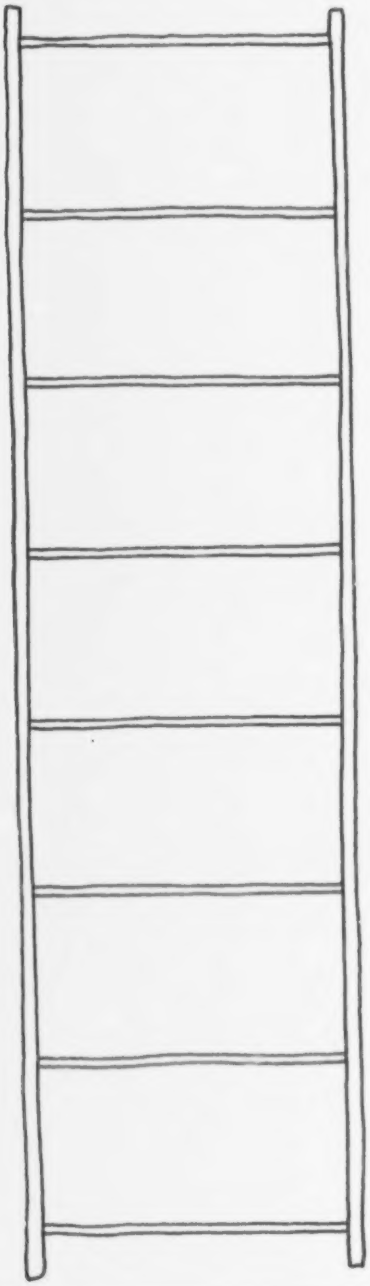
Direct students to the "**Ladder of Success**" worksheet on the next page. Students will list the sequential steps needed in order to reach their goal.

LADDER OF SUCCESS

Name ______________________

List in sequential order the steps necessary for you to realize your goal.

GOAL



STEP 1.

PICTURE THIS

STUDENTS CREATE A VISUAL REPRESENTATION OF THEIR GOAL.

OBJECTIVE *The students will*

practice visualizing their goal.

ACTIVITY/ DISCUSSION A treasure map is a picture of the goal fully realized. It is a valuable process because it forms a clear, sharp image allowing students to focus their energy.

Treasure maps can be made by drawing, painting, or by making a collage. Students will make a treasure map showing their goal fully realized. Display the treasure maps where they can be easily viewed.

ADDITIONAL RESOURCES

Thinking and Feeling

Brain/Mind Bulletin, P.O. Box 42211, Los Angeles, California 90042. (Send for free copy.)

Casebeer, Beverly. ***Using the Right/Left Brain, An Auditory Imagery***. Academic Therapy Publications, Novato, California.

Clark, Barbara, ***Growing UP Gifted***, 2nd Edition. Old Tappan, New Jersey, Prentice Hall, Inc. 1983.

Communication Skills – Curriculum Guide for Teaching Gifted Students. Sacramento, California, 1973.

Covington, Martin V., et al, ***The Productive Thinking Program: A Course in Learning to Think***. Columbus, Ohio: Merrill Publishing Co., 1974.

deBono, Edward, ***Children Solve Problems***. London: Penguin Books, Inc., 1972.

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Fearn, Leif, ***Teaching for Thinking: 311 Ways to Cause Creative Behavior***. San Diego, California: Kabyn Books, 1977.

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Glover, John, ***Becoming a More Creative Person***. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1980.

Igniting Creative Potential. Salt Lake City, Utah: Project Implode, 1971.

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Jacobs, Gabriel H.L., ***When Children Think – Using Journals to Encourage Creative Thinking***. New York: Columbia University Teachers College press, 1970.

Krathwohl, D.R., B.S. Bloom, and B.B. Masias, ***Taxonomy of Objectives: The Classification of Educational Goals***. New York: McKay, 1964.

LaRaus, Roger and R. Remy, ***Citizenship Decision-Making***. Menlo Park, California: Addison-Wesley Publishing Co., 1978.

Lipson, Greta B. and Baxter Morrison, ***Fact, Fantasy, and Folklore: Expanding Language Arts and Critical Thinking Skills***. Carthage, Illinois: Good Apple, Inc., 1977.

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Nelson, Robert, ***Decision Making***. Bloomington, Illinois: McKnight Publishing Co., 1976.

Raths, Louis E. and S. Wasserman, ***Thinking Box: Thinking Skills Development Box***. Chicago, Illinois: Benefic Press, 1978.

Samples, B., ***Essence II***. Reading, Massachusetts: Addison-Wesley Publishing Co., 1983.

Shallcross, Doris J., ***Teaching Creative Behavior***. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1981.

Stanish, Bob, ***I Believe in Unicorns – Classroom Experiences for Activating Creative Thinking***. Carthage, Illinois: Good Apple, Inc., 1979.

Stanish, Bob, ***Sunflowering – Thinking, Feeling, Doing Activities for Creative Expression***. Carthage, Illinois: Good Apple, Inc., 1977.

Symonds, Martha, ***Think Big! Special Projects for Creative Thinking***. Santa Barbara, California: The Learning Works, 1977.

Torrance, Paul and R.E. Myers, ***Creative Learning and Teaching***. New York: Harper and Row, 1970.

Treffinger, Donald J., ***Encouraging Creative Learning for the Gifted and Talented***. Ventura, California: Ventura County Sueprintendent of Schools Office, 1980.

Williams, Frank E., ***Total Creativity Program for Individualizing and Humanizing the Learning Process***. Englewood Cliffs, New Jersey: Educational Technology Publications, Inc., 1967.

2

The eggs hatch and the caterpillar feeds.
As a caterpillar must care and nurture itself to become a butterfly,
so must an individual care for himself.
In this unit, students realize the relationship between
the body and the mind.

Healthy Body... Healthy Mind

Healthy Body . . . Healthy Mind attempts to establish the relationship between the physical body and mind. It provides students with the opportunity to explore nutrition, effects of sugar, and the utilization of critical thinking when choosing food. Students are also presented with information on stress. Through the knowledge of nutrition and the causes of stress, students identify areas of stress in their lives and create a stress reduction plan.

NUTRITION

Health experts are beginning to recognize the therapeutic link between the mind and body and the resulting need for a wholistic approach to living. This section attempts to provide students with opportunities for exploring nutrition, exercise, mental health, and their impact in maintaining a healthy mind and body. The effects of sugar on the body . . . the use of food additives . . . the nutritional value in consumer foods . . . are studied. Students become aware that they are responsible for their body's care. Through application of the critical thinking process, students begin to make informed choices regarding their diet . . . and to begin to see the interdependent nature between the physical, emotional, and mental aspects of being.

TYING TOGETHER THE MENTAL, EMOTIONAL, & PHYSICAL

STUDENTS DISCUSS THE INTERRELATIONSHIPS BETWEEN THE MENTAL, EMOTIONAL, AND PHYSICAL ASPECTS OF HUMAN BEINGS.

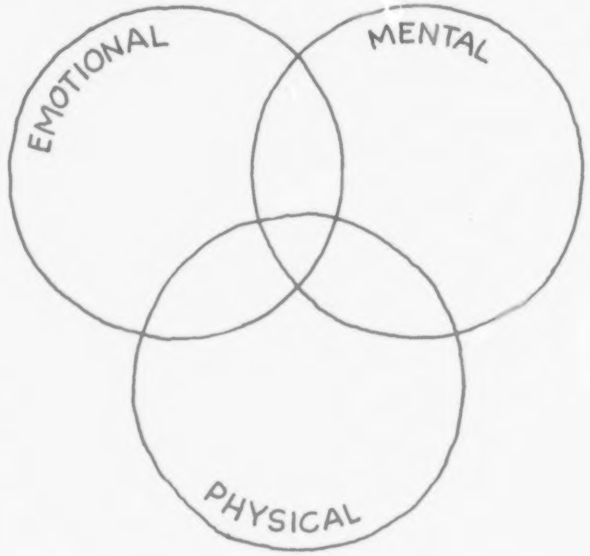
OBJECTIVE

The students will

understand how the mental, emotional, and physical aspects of being are related.

ACTIVITY/ DISCUSSION

Discuss the effects of food, stress, sugar, self-talk, and moods on a person's well being. Extract the interrelationship of physical, emotional, and mental aspects by asking students what happens when they physically do not feel well. How does sickness affect mental and emotional feelings? When you are emotionally down, how does it affect your physical and mental state of being?



"Certainly, the growing seed is gathering nourishment from its environment, but the process is no mere sticking together of the nutritive elements, for it absorbs and transforms them, and one sees nothing like this in the manufacture of an electric motor or computer." — Alan Watts

NUTRITIONAL BUILDING BLOCKS

STUDENTS RESEARCH AND DISCUSS THE BASIC ELEMENTS OF NUTRITION. STUDENTS COLLECT AND ANALYZE DATA ON THEIR DAILY EATING HABITS.

OBJECTIVES *The students will*

understand what constitutes a balanced diet.

become aware of any nutritional imbalances in their diets.

ACTIVITY/ DISCUSSION Introduce a working vocabulary of the elements of nutrition. Include carbohydrates, fats, proteins, vitamins, and minerals. Have the class divide into five groups to research the role of their chosen element and present the information to the class.

As a group, list foods that fall into the following categories: dairy, protein, vegetable/fruit, bread/cereal, and others. Discuss how the basic elements of nutrition are supplied by those foods listed in the "other" group. Are they "junk" foods?

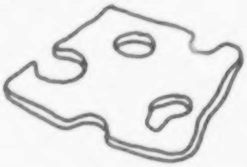
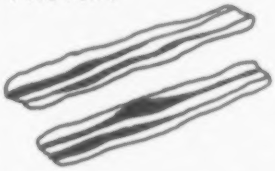
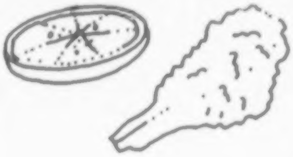
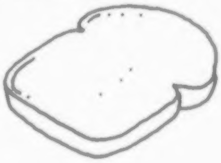
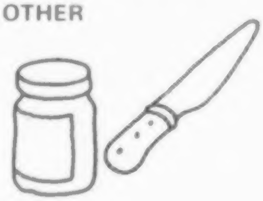
Have the students collect data on their daily eating habits, using the "**Daily Diet Data Collection**" chart on the next page. Use check marks to indicate servings in each group. Discuss what equals one serving. Have the class make up a daily diet. Analyze it on the board to see if it is nutritionally balanced.

The students will analyze the data on their eating chart to see where any imbalances lie. Set a weekly eating goal to correct any imbalances. Display a class graph to chart progress in changing eating habits. Students will state their weekly goal and the steps they will use to realize their goal. Determine how successful the students have been in reaching their goals. What are the major stumbling blocks?

Activities suggested in Unit II, "Nutrition", are adapted from ***Good for Me; All About Food in 32 Bites***, by Marilyn Burns, illustrated by Sandy Clifford. A Brown Paper School book. Copyright © 1978 by The Yolla Bolly Press. Used by permission of Little, Brown, and Company.

DAILY DIET DATA COLLECTION

Collect data on your daily eating habits. Place a check mark in each of the food groups to indicate servings.

FOODS	DAY 1	DAY 2	DAY 3
DAIRY 			
PROTEIN 			
VEGETABLE/FRUIT 			
BREAD/CEREAL 			
OTHER 			

WHAT'S IN A LABEL?

STUDENTS COLLECT LABELS AND ANALYZE THE LISTED INFORMATION.

OBJECTIVE *The students will*

discover that labels tell how much food value is in the product.

ACTIVITY/ DISCUSSION Have each student bring in a label from a canned or packaged food. Form small groups. Have the students read their labels and analyze what nutritional information the labels list.

Ingredients are listed in order of declining importance. The largest quantity contained in the product comes first, then the second, and so on. The required nutritional information must include the size of one serving, the number of servings in the container, the number of calories in each serving, the grams of protein, carbohydrates, and fats in each serving, and the percentage of recommended daily allowance supplied in each serving for protein, Vitamin A, thiamine, riboflavin, niacin, Vitamin C, calcium, and iron.

Have the class create a list of information that labels *do not* supply. For example, when was the container made? How long has it been on the market shelf? How long will it stay there before it's removed if no one buys it? How long will the product last?

Read ingredients from products, e.g., "Cup O' Noodles", "Tab", frozen beef pie, lemon cream pie. Do not mention the name of the product. Ask students to identify the food. Continue a discussion by asking why some of the items were difficult to identify.

SUGAR — CAN WE LIVE WITHOUT IT?

STUDENTS RESEARCH INFORMATION ABOUT SUGAR FOUND ON LABELS AND ESTIMATE THEIR DAILY SUGAR INTAKE.

OBJECTIVE

The students will

become aware of the sugar content in various foods.

ACTIVITY/ DISCUSSION

Have the students refer to the labels that were read to them in the previous activity and determine which ingredients appear most frequently and in the greatest quantities. Sugar should be near the top of the lists. Point out that the national average for sugar intake in the U.S. is over 100 pounds of sugar a year, or ¼ pound every day . . . about ¾ of a cup of sugar (115 grams).

Put a list of foods on the board with the approximate sugar content of each. Let the students estimate their daily total grams and see how close they come to the national average. Use the following for figuring sugar intake.

1 teaspooon white sugar, syrup, honey	5 grams
1 cupcake	10 grams
1 scoop of ice cream	12 grams
1 ounce of candy 1 glass of juice drink 1 piece of apple pie	20 grams
½ ounce piece of chocolate	30 grams
1 12-ounce can of cola	30 grams

SUGAR — GOOD FOR WHAT?

STUDENTS EXAMINE THE EFFECT OF SUGAR ON TEETH AND EXPERIENCE THE PHYSICAL EFFECTS OF SUGAR ON MUSCLE STENGTH.

OBJECTIVE

The students will

become aware of some of the effects of sugar on their bodies.

ACTIVITY/ DISCUSSION

Ask someone to volunteer a spare tooth and drop it into a glass of cola. Have the class observe what happens over a period of time. Bacteria digest the sugar, causing acid, which eats away at the enamel protecting the tooth. Have the class list ways to prevent tooth decay from sugar, including: (1) avoid sugar, (2) keep teeth well brushed, (3) brush or rinse after eating.

Divide the class into pairs of equal stature. Have Partner A stand behind Partner B. Partner B's hands are at his or her side. Using one hand, Partner A pulls Partner B's arm back and notes how much resistance Partner B can exert. Now, Partner B places a pinch of sugar on his or her tongue and the same process is repeated. The resistance Partner B is able to exert should be considerably reduced. Reverse partners and repeat the whole process.

Ask the class to verbalize what happened and apply the discovery to common uses of sugar, such as: (1) increasing energy, (2) supplying extra strength right before a sports event. Discuss the lasting effects sugar provides.

Do Bugs Know Something We Don't?

STUDENTS EXPLORE THE ELEMENTS OF NUTRITIONAL VALUE IN CONSUMER FOODS.

OBJECTIVE

The students will

begin to analyze the nutritional value in the foods they eat.

recall the various names of sugars listed on labels from consumer foods

---

ACTIVITY/ DISCUSSION

Have the class refer to the labels used in Activity 3. Generate a list of different types of sugar found on the labels. For example, molasses, fructose, glucose, sucrose, lactose, maltose, corn syrup, maple syrup, and dextrose. List products that contain sugar. Include: soup, hot dogs, bacon, mayonnaise, salad dressing, cans of vegetables, crackers, spaghetti dinners, and pizza mixes. Point out that the average American diet is about twenty percent sugar. Bugs or weevils can get into flour, spices, pancake mixes, or whole grain cereals but they *never* get into sugar. Do they know something humans don't? Have students design a poster from the point of view of the bug or weevil — warning human beings about sugar. Play the song, "Junk Food Junky", for fun.

Break into small groups and brainstorm what the nutritionally aware person should know. Include the availability of uncooked fruits and vegetables, infrequent use of soft drinks, limited intake of refined foods and foods with sugar added, reading ingredient labels when shopping, limited use of salt, maintaining body weight 15% of ideal weight, planning leisurely meal times, and avoiding fast food restaurants. Create a pamphlet for distribution.

ARE ADDITIVES ESSENTIAL?

STUDENTS DEBATE THE PROS AND CONS OF ADDITIVES.

OBJECTIVES *The students will*

appraise the relative merits of additives in consumer foods.

justify decisions based on logical conclusions about additives.

ACTIVITY/ DISCUSSION Inform the students that there are almost 3,000 extra ingredients food manufacturers can add to foods when they are processing them.

Present the arguments for using additives. Examples of such are listed below.

Convenience. Processed foods were developed for convenience, otherwise people would have to bake their own cookies and make their own spaghetti sauce. There would be no quick snacks to munch on.

Color. Who would want to eat the pale, whitish stuff that is natural butter instead of rich, yellow butter? or white banana ice cream? or natural green oranges instead of the bright orange-colored oranges which are dyed?

Texture. Which is more appealing — soft, squishy marshmallows and breads that feel fresh, or hard and dry marshmallows and bread? Peanut butter that stays creamy, or the kind with a layer of oil you always have to stir?

Flavor. Do you prefer food with the flavors enhanced by MSG or food that is bland? Pop that has sugar or pop with artificial sweeteners?

Have the students decide which side of the issue they will take a stand on and form two lines facing each other — one for the pros and one for the cons. Taking turns, alternate between the pros and cons until every student has made one statement about additives based on logical conclusions. Go back to the beginning of each line and give each student a chance to rebuttal a statement from the opposite line if he or she chooses. At any time, a student who changes his or her mind can move to the opposite side. At the end of the debate, take time to see where everyone "stands" on the issue.

STRESS

The subject of stress in children is a relatively new topic of concern among parents and teachers. In fact, the concerns that induce stress in the child have seemed unimportant in comparison to the stressors and problems confronted by adults. The damage is just as real, however, and the patterns and ways of dealing with stress are just as troublesome.

In this section, students begin to identify signs and causes of stress in their daily lives. As they see how stress manifests itself, they begin to develop their own stress reduction plan. Visualization, positive self-talk, and relaxation are a few of the tools they will utilize. These tools enhance the ability of the brain to operate and to process information more rapidly. An expansion of intuitive knowing, so essential in the understanding of self, is often noticed.

STRESS — A WAY OF LIFE?

STUDENTS DISCUSS STRESS AND ITS FUNCTION IN TODAY'S SOCIETY.

OBJECTIVE

The students will

be able to define health.

ACTIVITY/ DISCUSSION

Initiate this activity by writing the word ***stress*** on the board. Ask the students how many of them have heard of this word. Ask students to define the word ***stress***. Explain that many individuals experience stress; and because of this, much research is being done today by doctors and psychologists in this area.

When discussing ***stress***, explain that a basic concept to remember is that how the body reacts to stress depends on how the mind reacts to stress. The two cannot be considered separately. How the mind reacts to stress depends on how it has learned to relax. (Review the visualization procedures outlined in the first unit.)

Ask students to define ***health***. Essentially, the dictionary defines it as a wholeness, a condition in which all functions of the body and mind are normally active. Discuss the definition with the class. Have the class brainstorm different ways they can maintain their ***health***. Have students create posters that represent health. Display the posters around the school.

When Does Stress Become Distress?

STUDENTS BRAINSTORM CAUSES, SIGNS, AND WAYS PEOPLE DEAL WITH STRESS.

OBJECTIVE

The students will

recognize causes, signs, and positive and negative methods of dealing with stress.

ACTIVITY/ DISCUSSION

Explain that stress is basic to life. We are constantly affected by irritants in our environment, such as air pollution and loud noises. Stress can also be related to diet deficiency and unidentified emotions or feelings. Have the students brainstorm a list of possible causes of stress. These causes may be related to them as individuals or to the whole world. Now ask students to list signs of stress. (This list should include such signs as rounded shoulders, tiredness, fingernail biting, and uncontrollable crying.)

Ask students to think of a lemon. What happens to their mouth?...it salivates. Ask students to remember an embarrassing experience. Can they re-experience the heat of the blush? Can they remember an insult and feel the reaction in the pit of their stomach? This illustrates how the physical body reacts to certain stimuli from the environment.

Have the students brainstorm the many ways people deal with stress. Generate a positive and negative list. For example:

Positive	**Negative**
Jogging	Overeating
Visualization/relaxation techniques	Drug abuse

After you have completed the brainstorming exercise, ask students to re-evaluate the list to see if any may appear in both columns. Encourage the recognition that some may not agree with the division of the positive and negative methods used to deal with stress. It is up to each individual to identify their most effective way to deal with stress.

WHAT'S BUGGING YOU?

STUDENTS COMPLETE AN INDIVIDUAL STRESS CHART.

OBJECTIVE

The students will

recognize their individual stress patterns.

ACTIVITY/ DISCUSSION

In past activities the students have discussed the causes, signs, and positive and negative methods for dealing with stress. Now the students will apply this information to their lives. In an effort to enable students to recognize their individual stress patterns, have students complete the **Individual Stress Chart** on the next page. Students should list a minimum of three signs of stress.

Stress Sign(s)	**Cause(s)**	**Positive Action(s)**
Tight shoulders	Anxiety about school work	Relaxation exercises for the body. Define what needs to be completed and set up a schedule to do it.

After the students have completed their charts, hold a class discussion sharing their various techniques for dealing with stress. Encourage combining or elaborating upon each other's ideas.

Have the students analyze their charts, looking for patterns. After they have completed their analysis, ask them to create a stress reduction plan. This should include physical exercise, a nutritionally balanced diet, as well as time for doing the things they love to do (reading, building models, or playing with their pet). Suggest the planning of a schedule to implement their plan.

INDIVIDUAL STRESS CHART

List a minimum of three signs of stress that you have experienced. Write down the cause for each. Brainstorm and record positive actions useful to eliminate or reduce the stress factor.

	Stress Sign(s)	Cause(s)	Positive Action(s)
1.			
2.			
3.			

OH! WHAT A RELIEF IT IS!

STUDENTS DISCUSS THE FOUR THINGS THEY CAN STRIVE FOR IN AN EFFORT TO REDUCE STRESS.

OBJECTIVE *The students will*

become aware of the things they need to do to deal with stress.

ACTIVITY/ DISCUSSION List on the board the four things students can strive for in an effort to deal with stress.

Self-responsibility. Everyone needs a sense of purpose.

Physical fitness. It is important to improve endurance, flexibility, and strength. Our bodies are like cars; they need to be finely tuned if they are to function properly.

Good diet. The body, in order to function properly and deal with various kinds of stress, needs a diet that provides the right amount of nutrients. For example, large quantities of sugar impact problems associated with stress.

Positive self-image. It's important for individuals to feel good about themselves. In addition, self-expression is necessary in order to communicate emotions, feelings, and thoughts. Sum the list up with the idea that individuals can achieve wellness through a positive state of mind.

WELLNESS IS . . .

STUDENTS DISCUSS "WELLNESS IS" BY JOHN TRAVIS, M.D.

OBJECTIVE *The students will*

understand the concept of the interrelationship between the mind and the body.

ACTIVITY/ DISCUSSION Conclude this unit with "Wellness Is" by John Travis, M.D. Discuss each statement. Allow substantial time for students to express and react to each other's ideas and experiences.

WELLNESS IS

Wellness is . . .

knowing what your real needs are and how to get them met;

expressing emotions in ways that communicate what you are experiencing to other people;

acting assertively, and not passively or aggressively;

enjoying your body by means of adequate nutrition, exercise, and physical awareness;

being engaged in projects that are meaningful to you;

knowing how to create friendships with others;

responding to challenges in life as opportunities to grow in strength and maturity, rather than feeling beset by "problems";

creating the life you really want, rather than just reacting to what "seems to happen";

relating to troublesome physical symptoms in ways that bring improvement in conditions as well as increased knowledge about yourself;

enjoying a basic sense of well-being, even through times of adversity;

knowing your own inner patterns...emotional and physical...and understanding "signals" your body gives you;

trusting that your own personal resources are your greatest strength for living and growing;

experiencing yourself as a Wonderful Person.

From ***THE WELLNESS WORKBOOK***, by Regina Sara Ryan and John Travis, M.D. Copyright, 1981. Used with permission. Available from Ten Speed Press, Box 7123, Berkeley, CA 94707. $9.95 (paper) + $.75 for postage and handling.

INDEPENDENT STUDY

STUDENTS CHOOSE AND COMPLETE AN INDEPENDENT ACTIVITY.

OBJECTIVES *The students will*

analyze, evaluate, and synthesize information from the nutrition and stress sections.

take responsibility for their own learning by choosing and completing an independent activity.

ACTIVITY/ DISCUSSION On the next page are ideas for independent activities. Encourage students to create their own ideas for study. Allow class time for project presentations.

IDEAS FOR INDEPENDENT STUDY

NUTRITION:

1. Research the effects of sugar on the body.
2. Create a poem or song about junk food.
3. Create cartoons about various aspects of nutrition.
4. Create a recipe book using natural food snacks and substitutes for sugar.
5. Plan and put on a "healthy food" party or meal.

STRESS:

1. Research the use of biofeedback techniques in reducing stress.
2. Write a report discussing the physical manifestations of stress in the body.
3. Design a poster illustrating the negative and positive approaches to stress reduction.
4. Research the use of transcendental meditation in reducing stress and compare/contrast this technique with biofeedback.
5. Create a cartoon of an animal experiencing stress caused by humans.
6. Create a directory of stress management consultants in your area.
7. Using visualization techniques, picture the most stressful day of your life, then picture the most relaxed and peaceful day. Write a brief description of each. Include the elements of each day that you might have controlled.
8. Solve the problem of world stress. Write a news story of how you solved this complex problem.

ADDITIONAL RESOURCES

HEALTHY BODY . . . HEALTHY MIND

Airola, Paavo, ***Hypoglycemia: A Better Approch***. Phoenix, AZ: Health Plus Publishers, 1977.

Anderson, Robert A., ***Stress Power***. New York: Human Sciences Press, 1971.

Burns, Marilyn, ***Good For Me***. Boston: Little, Brown, and Co., 1978.

Clymer, S., ***Diet: A Key to Health***. Quakertown, PA: Philosophical Publishing Co., 1966.

David, M., M. McKay & E. R. Eshelman, ***The Relaxation and Stress Reduction Workbook***. Richmond, CA: The New Harbinger Publications, 1980.

Davis, Adele, ***Let's Eat Right to Keep Fit***. New York: Harcourt Brace Jovanovich, Inc., 1970.

The Droofus Stories. Boston, MA: Learning for Life, 1982.

Ferguson, James M., ***Habit Not Diet***. Palo Alto, CA: Bull Publishing Co., 1976.

Fredericks, Carlton and H. Goodman, ***Low Blood Sugar and You***. New York: Grosset & Dunlap, 1969.

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Greenberg, Polly, ***How to Convert the Kids from What They Eat to What They Oughta***. New York: Ballantine Books, Random House, Inc., 1978.

Hoffman, Lieselotte, ***The Great American Nutrition Hassle***. Palo Alto, CA: Mayfield Publishing Co., 1978.

The Holistic Health Handbook, compiled by the Berkeley Holistic Health Center, Berkeley, CA: And/Or Press, 1978.

Keoppen, A.S., ***Elementary School Guidance & Counseling, "Relaxation Training for Children"***. 1974.

Lappe, Frances M., ed., ***Diet for a Small Planet***. Westminster, MD: Ballantine Books, 1971.

McCamy, J.C., M.C. & J. Presley, ***Human Life Styling***. Harper Colophon Books, 1975.

Newbold, H.L., M.D., ***Mega-Nutrients for Your Nerves***. New York: Berkeley Publishing Corporation, 1978.

Nutrition and Mental Health. Hearing before the Select Committee on Nutrition and Human Needs of the United States Senate. Ninety-fifth Congress, First Session. Berkeley, CA: Parker House, 1980.

Ostrander, S., L. Schroeder, ***Super Learning***. New York: Dell Publishing Co., 1979.

Oyle, Irving, M.D., ***The New American Medicine Show***. Santa Cruz, CA: Unity Press, 1979.

Oyle, Irving, M.D., ***The Healing Mind***. Millbrae, CA: Celestial Arts, 1975.

Richardson, F. and R. Woolfolk, ***Stress, Sanity and Survival***. New York: New American Library, 1979.

Schauss, Alexander, ***Diet, Crime, and Delinquency***. Berkeley, CA: Park House, 1980.

Vezza, Therese and M.T. Bagley, ***The Investigation of Real Problems: A Teacher's Handbook for Developing Higher Level Thinking Skills in Gifted and Talented Children***. Woodcliff Lake, NJ: Educational Institutes and Consulting Assoc., Inc., 1979.

Williams, Roger, ***Nutrition Against Disease***. New York: Pitman Publishing, 1971.

Winter, B., ***Relax and Win — Championship Performance in Whatever You Do***. La Jolla, CA: Barnes & Co., 1981.

Yudkin, John, M.D., ***Sweet and Dangerous***. New York: Peter H. Wyden, Inc., 1972.

3

In the third stage of the metamorphosis from a caterpillar to a butterfly, the caterpillar continues to feed itself, shedding its old skin. Throughout education, the mind feeds on logical and rational thought. While the ability to think logically and rationally are necessary, it is important to provide students with opportunities to synthesize both logical and creative thought processes. In this unit, students explore "reality" through perception of data, and begin to consider other realities that may not necessarily be substantiated by the data. Thus, the child removes layers of old perceptions, not to discard and never use again, but to recycle them, so that they might be used in a more effective and creative way when viewing the world.

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Scientists Explore Unexplained Phenomena

Scientists Explore Unexplained Phenomena introduces students to scientific procedure. This unit outlines the steps for conducting an experiment and writing a scientific paper. Students are also provided with the opportunity to present their findings to the class in a simulated "science convention". The unit attempts to apply the objectivity of scientific procedure to an area that has long been considered subjective in nature, unexplained phenomena.

scientific procedure

It is recognized more and more that scientific thought is characterized by both logical and creative thinking. Students begin to explore these thinking processes by applying them in the design of a scientific investigation. This section provides the necessary information for conducting and writing up a scientific study. The challenge lies within the fact that students must creatively apply the scientific procedure to different aspects of unexplained phenomena. This is not an area readily conducive to scientific exploration. Many of the events are unobservable. Students learn by creatively applying the methods and developing different ways of collecting data.

A Scientist Is . . .

STUDENTS DISCUSS WHAT A SCIENTIST DOES AND THE CHARACTERISTICS THEY POSSESS.

OBJECTIVE *The students will*

be able to define the attributes of scientists.

ACTIVITY/ DISCUSSION

Initiate this unit by asking students what they think a scientist is. What do they do? Some key words are: ***postulate, research, question, speculate, hypothesize, infer, conclude***. Discuss the importance of science in relationship to its contributions to the world. Conclude the discussion by asking what characteristics scientists possess, such as inquisitiveness, ability to perceive interrelationships and connections, ability to draw conclusions, and make decisions.

Explain that we live in a world that highly values scientific procedure when substantiating facts. It provides an objective outlook on the world, enabling us to measure the world in which we live. Unexplained phenomena, in the past, have not fit so neatly into this category. Their task in this unit will be to attempt to apply scientific procedure to the study of unexplained phenomena.

"We must first extend the boundaries of inquiry of modern science, extend our concept of what is possible for man." — Robert Ornstein

BECOMING A SCIENTIST

STUDENTS REVIEW AND DISCUSS THE ***SIX STEPS OF SCIENTIFIC PROCEDURE****.*

OBJECTIVE *The students will*

understand the principles of scientific procedure.

ACTIVITY/ DISCUSSION Distribute copies of the **Six Steps of Scientific Procedure**, found on the next page. Indicate that not only does this handout outline the steps involved in experimentation, but also provides the format used when writing a scientific research paper.

Explain that research design begins with the formulation of a problem or question. The first step is to research the problem or question to see what others in the field have done. The second step is forming the hypothesis. The next step is designing the experiment. Go through the six steps, giving examples and answering questions. In some instances, additional activities may be required to build up skills of observation, research, data collection methods, and graphing.

SIX STEPS TO SCIENTIFIC PROCEDURE

1. **Introduction**

   The first step to scientific procedure is to research the topic being pursued. The information is summarized and included in the written introduction. The purpose of the study is also indicated in this section.

2. **Hypothesis**

   A hypothesis is a tentative assumption. Through experimentation, the consequences are tested and the hypothesis is either verified or discounted. Instead of a hypothesis, a research question may be stated. Data is then collected to answer the question or confirm the hypothesis.

3. **Materials**

   In this section, list everything used in experimentation. Also, if applicable, list materials used for a control group.

4. **Procedure**

   Describe, step by step, the method for carrying out the experiment. Include data collection sheets used.

5. **Results**

   Record exactly what happened during the experiment. Record the data and the time events occurred. When writing this section, make no judgements and draw no conclusions. Always, if possible, collect numerical data. Include graphs, tables, charts, and diagrams.

6. **Conclusions/Discussion**

   Write down conclusions based on the findings from the experiment. This is the summary of ideas, thoughts, and criticisms surrounding the experiment.

Applying Scientific Procedure to Unexplained Phenomena

Traditionally, many aspects of unexplained phenomena do not neatly fall under the category reserved for scientific study. It is hard to substantiate fact in an area that, for the most part, is ambiguous and unobservable. This section explores the problems of objectivity when conducting a scientific experiment related to unexplained phenomena. Students will consider ways to apply scientific procedure determining the existence of phenomena such as mental telepathy and the energy of pyramids. Through brainstorming ways to collect data, students embark upon a scientific study. The study is explored . . . analyzed . . . creatively solved . . . and evaluated.

FLYING SAUCERS, PYRAMID POWER, AND MUCH MORE

STUDENTS GENERATE A LIST OF DIFFERENT TYPES OF UNEXPLAINED PHENOMENA AND DISCUSS THE LIST.

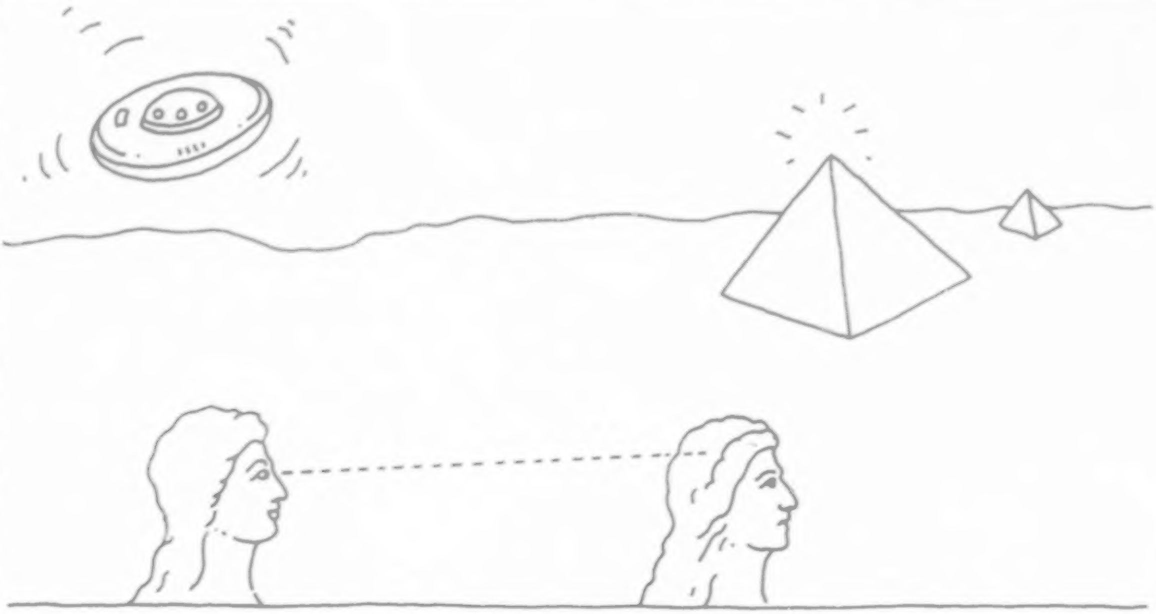
OBJECTIVES *The students will*

become aware of the different aspects of unexplained phenomena.

apply critical thinking skills in discussing unexplained phenomena.

ACTIVITY/ DISCUSSION Direct the students' attention to the topic of unexplained phenomena. Brainstorm different types of unexplained phenomena. This list may include ESP . . . dowsing . . . and pyramid energy. Discuss the various topics. Encourage the students to apply critical thinking skills to determine the validity of the information and the assumptions made throughout the discussion.

Emphasize that research design begins with formulation of a problem. Their task will be to take an area of unexplained phenomena and apply the method of scientific procedure.



Objectivitiy and Unexplained Phenomena

TEACHER SHARES DATA COLLECTION METHODS AND POSSIBLE EXPERIMENTAL DESIGNS WITH STUDENTS.

OBJECTIVE *The students will*

observe and make inferences about an unknown element of unexplained phenomena.

ACTIVITY/ DISCUSSION Brainstorm a list of ways to collect data. Guide the students to include observation, survey, literature review, and testing. Discuss how to develop a survey that yields numerical data. Discuss how to set up data collection sheets so information is clear and concise. Also, discuss the value of a control group.

Below are examples of two experiments that could be done. Illustrate the application of scientific procedure to unexplained phenomena by discussing with students the experiments below.

Pyramid Experiment:

Construct a six-inch cheops pyramid. Place a two-inch houseplant under a suspended pyramid. Place another two-inch houseplant under a suspended six-inch tall box, and have another two-inch houseplant as a control. Collect data for ten days to determine whether growth differs in the situations.

Collect data on the **Pryamid Data Collection Sheet** on the next page. In conclusion, stress that the purpose of this experiment is to validate an experiment that has already been done.* Stress the importance of replicating and validating experiments. Ask what role replication and validation play in the field of science.

*See ***Pyramid Energy Handbook*** by Serge King.

PYRAMID DATA COLLECTION SHEET

	Pyramid		Box		Control	
Height of plant at the onset of the experiment						
	Millimeters	Comments	Millimeters	Comments	Millimeters	Comments
Day 1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total # of Millimeters grown						

Each day measure each of the plants and record in millimeters each plant's height. At the completion of ten days, record the total number of millimeters each plant grew.

Telepathy Experiment:

The experimenter tells the subject that he or she is going to think of the number zero or the number one. The subject is given the **ESP Score Sheet**.

After the experimenter says "target", the subject has five seconds to guess the number the experimenter is thinking. The experimenter records the subject's response and also records the "target". Approximately four trials, of 25 times each, must be done before the data is considered complete. This same test can be used with words, symbols, color, or more numbers. The basic design can be used to test for clairvoyance and precognition as well.

Have the class choose one of the topics from the list of unexplained phenomena brainstormed in the previous activity and develop a research design. Discuss where sources of existing information may be found. Have students develop a hypothesis . . . decide on the experiment design . . . list the materials that will be needed . . . and experiment with different types of data collection sheets and summary tables. Discuss how data can be graphed by counting or the computation of averages.

Provide class time for students to construct their experimental design and data collection sheets. Individual conferences will be necessary to make sure students are on the right track.

"Can you prove the world was not created yesterday, complete with artifacts and memories?"

— source unknown

ESP SCORE SHEET

Name ______________________________ Number of correct hits __________

Date ______________________________ Hits by chance alone __________

	Trial 1		Trial 2		Trial 3		Trial 4	
	Target	Response	Target	Response	Target	Response	Target	Response
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								
25.								
HITS								

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EXPERIMENT DESIGN

This time, through an independent study, students will design and creatively apply the scientific procedure to an aspect of unexplained phenomena. A greater degree of freedom and independence is provided as the students select the area to conduct their own experiment. This includes identifying a research question . . . generating and applying the information . . . as well as the responsible use of class time.

In the scientific community, scientists are often confronted and challenged as well as praised by their colleagues. In this spirit, students should be encouraged to interact and assist each other in the design and implementation of each other's experiments. By providing opportunities to share findings, the students begin to see the necessary role that interaction plays in the learning process. Encouraged by their peers through questioning and the need for further elaboration, the students' focus of thinking is continually expanded.

SCIENTISTS VERIFY

OVER A TWO-TO-FOUR WEEK PERIOD STUDENTS WILL CONDUCT RESEARCH, COLLECT DATA, AND WRITE RESEARCH PAPERS.

OBJECTIVES *The students will*

design and conduct an experiment in the area of unexplained phenomena.

analyze current research surrounding the topic.

prepare a presentation for the class on his or her findings.

ACTIVITY/

Provide ample class time for students to work on their experiments. Provide additional activities for students who may not need all the class time. Arrange for individual conferences to help students in their written work, experiment design and data computation.

Visit a public or college library for research. Encourage the use of periodicals and resource persons as well as books.

Throughout the independent work time, encourage interaction between the students. Hold class discussions to keep everyone up to date on each other's findings.

1st ANNUAL SCIENCE CONVENTION

STUDENTS PARTICIPATE IN A SCIENCE CONVENTION WHERE RESEARCH FINDINGS ARE SHARED, CRITICAL INPUT IS GIVEN, AND FUTURE RECOMMENDATIONS ARE DISCUSSED.

OBJECTIVE *The students will*

increase their ability to present material to a group and accept positive and critical input.

ACTIVITY/ DISCUSSION At the completion of the research project, hold a class science convention where each "scientist" presents his/her findings and conclusions. Encourage the use of visual aids.

Initiate a discussion after each presentation. The audience needs to be encouraged to analyze each scientist's experimental design and evaluate the conclusions presented. Encourage the students to look at all the variables operating and feel comfortable with sharing another way of interpreting the data.

SUBJECTIVITY VERSUS OBJECTIVITY

STUDENTS PARTICIPATE IN A DISCUSSION ON THE DIFFERENCES BETWEEN OBJECTIVE AND SUBJECTIVE DATA.

OBJECTIVES *The students will*

understand the difference between subjective and objective data.

identify the relative merits of objective and subjective data.

ACTIVITY/ DISCUSSION Discuss the difference between subjective and objective data. Explain that objective data is something that is observable and can be verified by scientific methods. Subjective data can be derived at through observation but lacks verification by scientific methods.

Together, list the strengths and weaknesses of each in terms of science. Encourage students to relate their experiments to the discussion of subjectivity versus objectivity.

ADDITIONAL RESOURCES

SCIENTISTS EXPLORE UNEXPLAINED PHENOMENA

Abruscato, Joe and J. Hassard, ***The Whole Cosmos Catalog of Science Activities***. Santa Monica, CA: Goodyear Publishing Co., Inc., 1977.

Donnelly, Katherine F., ***The Guidebook to ESP and Psychic Wonders***. New York: David McKay Publishing Co., 1978.

Fodor, Nandor, ***Encyclopedia of Psychic Science***. London: Arthur's Press, 1933.

Gittelson, Bernard, ***Bio-Rhythm — A Personal Science***. New York: Warner Books, 1975.

Gray, Eden, ***Mastering the Tarot***. New York: Crow Publishers, 1971.

Heaps, Willard, ***Psychic Phenomena***. Nashville, TN: Thomas Nelson, 1974.

Heywood, Rosalind, ***Beyond the Reach of Sense***. New York: E.P. Dutton and Co., Inc., 1974.

Hone, Elizabeth B., ***Teaching Elementary Science***. New York: Harcourt, Brace and World, Inc., 1967.

Hyrek, Allen J., ***The UFO Experience: A Scientific Inquiry***. Chicago: Henry Regnery, 1972.

King, Serge, ***Pyramid Energy Handbook***. New York: Warner Books, 1977.

Mishlove, Jeffrey, ***The Roots of Consciousness***. New York: Random House/The Bookworks, 1975.

Muir, Raquel, ***Science: Curriculum Guide for Teaching Gifted Children Science in Grades Four Through Six***. Sacramento, CA: California State Department of Education, 1970.

Ornstein, R.E., ***The Psychology of Consciousness***. New York: Viking Press, 1972.

Owen, A.R.G., ***Can We Explain the Poltergeist?*** New York: Traplinger, 1964.

Rogo, D. Scott, ***Parapsychology: A Century of Inquiry***. New York: Dell Publishing Co., 1975.

Ruchlis, Hy., ***Discovering Scientific Method With Science Puzzle Pictures***. New York: Harper and Row, 1963.

Sullivan, John J., and C.W. Taylor, ***Learning and Creativity with Special Emphasis on Science***. Washington, D.C.: National Science Teachers Association, 1967.

Sund, Robert B. et al, ***Investigate and Discover: Elementary Science Lessons***. Boston: Allyn and Bacon, Inc., 1974.

Tanner, Joey, ***The Mysterious, A Lighthearted Look at Intuition, Auras, Etc***. Tucson, AZ: Zephyr Press, 1981.

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Toben and Wolf, ***Space, Time and Beyond, Toward an Explanation of the Unexplainable***. New York, NY: E. P. Dutton Publishing, 1981.

Tompkins, Peter and C. Bird, ***The Secret Life of Plants***. New York: Harper and Row, 1973.

Vallee, Jacques and Janine, ***Challenge to Science: The UFO Enigma***. Chicago: Henry Regnery, 1966.

Youngpeter, John, ed., ***Inquire: Suggested Activities to Motivate the Teaching of Intermediate Science***. Stevensville, MI, 1976.

4

As the caterpillar sheds its final skin, it reveals the chrysalis.
Here, the greatest change of the process of metamorphosis occurs.
This unit explores the many perceptions of beauty and
provides students with the opportunity to explore the beauty
that surrounds them.
Still encased within the security of the chrysalis,
the child can look within and discover beauty.

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The WORLD of BEAUTY

The World of Beauty introduces students to a vocabulary that will describe beauty. Students will study the beauty found in nature, people, design, movement, rhythm, and paintings. The intent of the unit is to encourage students to find beauty, even in undesirable instances. In addition, this unit attempts to establish the concept that people perceive beauty differently and that, through open-mindedness, we can learn to accept another person's perceptions of beauty.

Defining Beauty

According to Webster's Dictionary, beauty is the quality attributed to whatever pleases or satisfies the senses or the mind . . . as by line, color, form, texture, proportion, rhythmic motion, tone, etc. Beauty provides an almost perfect arena for the exploration of perception, beliefs, and values. Since beauty is a perception and a state of mind, it is based on past experiences and personal preferences.

Students are encouraged to exlore the area of beauty as they utilize the concepts of form, texture, and color. Students emerge from this exploration with a vocabulary that allows them to verbally describe their images of beauty. Through sharing these images, students begin to realize that not all individuals perceive beauty in the same way. Through this sharing they begin to understand . . . and even to see another person's image of beauty.

Beauty is in the Eye of the Beholder

STUDENTS PARTICIPATE IN A DISCUSSION ABOUT BEAUTY, ANSWERING THE QUESTION, "WHAT DOES BEAUTY MEAN TO YOU?"

OBJECTIVES *The students will*

understand that beauty is determined by an individual's perception of it.

ACTIVITY/ DISCUSSION Begin a class discussion about beauty. Pose the question, "What is beauty?" Include comments about the individualistic nature of beauty. Explain that everyone has their own idea of the meaning of beauty. Note that beauty is individually determined and that beauty can be found everywhere.

Suggest the idea: "There is no beauty in a blackboard...(or textbook or pencil)." Ask the students to convince you differently.

Have the students write a paragraph answering the question, "What does beauty mean to you"?

"In beauty may I walk. All day long may I walk. Through the returning seasons may I walk. Beauty I will possess again." Navajo prayer, *Night Way*

Beauty is in the Form, Texture, Color of ...

STUDENTS ARE INTRODUCED TO THE WORDS, "FORM", "TEXTURE", AND "COLOR", TO DESCRIBE BEAUTY. STUDENTS APPLY THE WORDS IN VARIOUS ACTIVITIES.

OBJECTIVE

The students will

practice using the words, "form", "texture", and "shape" in discussing beauty.

ACTIVITY/ DISCUSSION

Initiate the activity by discussing ***form*** as a way of describing beauty. "Form" is the outline . . . "form" is the bone structure.

Collect pictures that represent ***form***. Examples may include the shadow of a tree on a sandy beach, a sea urchin, a pearly nautilus. Elaborate this idea by discussing rhythm and repetition in ferns and the cut section of a tree trunk. Other key words in describing form include logarithmic spirals, symmetry, circles, and spheres. Have students provide examples of items that include these descriptions of ***form***.

Suggest that ***texture*** is another element of beauty. "Texture" may be thought of as *form* on a smaller scale. "Texture" describes the finer parts of a pattern. An example would be seeing a diamondback rattler at a distance or close up. At a distance, a person might think of its form . . . closer up, they might think of its texture. Texture is created by surface structure.

Have the students brainstorm various types of surface structures, such as smooth, dry, rough, and sharp. Collect pictures that represent texture. Examples may include frost on leaves, the sea, and animals.

Color is another element of beauty. Explain that color is partly inherent and partly created from the changing light that strikes the object. An example of this is the manner in which the sea changes color.

Ask students if they can define color without using a color word. Explain that color has three measurable qualities:

> **Hue** – This describes a specific color. For example, the "hue" of grass is green.
>
> **Brilliance** – This refers to the relative absence of black from color. Color with high briliance contains little black; color with low brilliance contains more black.
>
> **Saturation** – This refers to the relative absence of white from color.

Provide the following examples and have students describe the color using the three qualities.

1. **Bright red fire engine.** Hue is red, brilliance and saturation are high.
2. **Green grass.**
3. **Manilla folder.**

Have students describe their hands in terms of form, texture, and shape. To abstract even more, have students complete the activities on the following pages.

BEAUTY IS THE FORM, TEXTURE, COLOR OF . . .

Complete each of the sentences. Choose objects that represent beauty to you.

Example:

1. Beauty is in the form of a warm heart.
2. Beauty is in the texture of sand between my toes.
3. Beauty is in the color of a red rose.

1. Beauty is in the form ____

____

____

____

2. Beauty is in the texture ____

____

____

____

____

3. Beauty is in the color ____

____

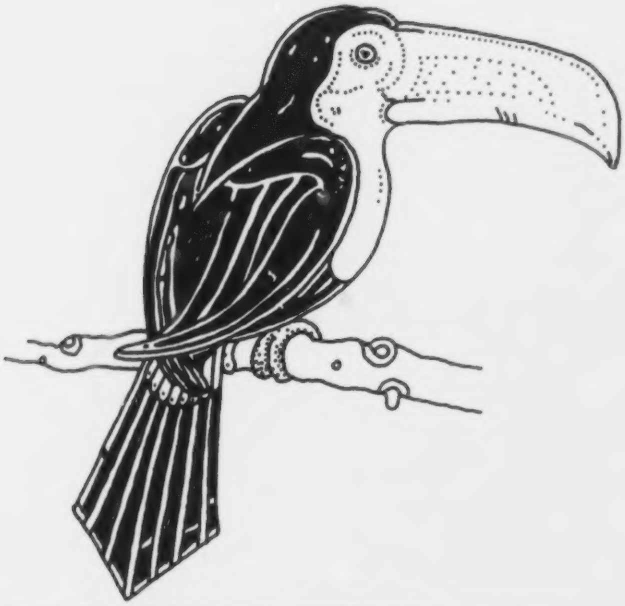
____

____

____

THE FORM, TEXTURE, COLOR OF BIRDS

You are a bird, living in the tropical jungle. Describe what you look like using words describing form, texture, and color. Include an illustration.



EXPLORING BEAUTY

Beauty is now explored in the broader categories of nature, design, movement, and rhythm. Building on the vocabulary and concepts already presented, the students describe their perceptions and unique observations of the beauty in their everyday experiences. Independent exploration of an area of beauty provides for application of the abstract concepts explored in this section.

BEAUTY IN NATURE

STUDENTS EXPLORE THE THREE ELEMENTS OF BEAUTY IN NATURE.

OBJECTIVE *The students will*

be able to apply the three elements of beauty to things found in nature.

ACTIVITY/ DISCUSSION Distribute the activity sheet, **Beauty in Nature**, on the next page. Have the class take a walk through an open field, forest, or the school playground. Ask students to look for examples of the three elements of beauty. Students should mark the activity sheet on the next page as shown below:

Object	Form	Texture	Color
Buttercup	Spherical	Smooth/Shiny	Bright Yellow Highly Saturated

Have students share their results with the class. Students may combine lists.

BEAUTY IN NATURE

Name ______________________

Find five or more objects in nature. Define each in terms of the three elements of beauty – form, texture, color.

OBJECT	FORM	TEXTURE	COLOR

BEAUTY IN DESIGN

STUDENTS COLLECT PICTURES OF NATURE SHOWING TEXTURE, FORM, OR COLOR. STUDENTS MAKE COLLAGES AND WRITE POETRY.

OBJECTIVES *The students will*

notice the design variations of beauty.

create a design, considering texture, form, and color.

make vivid sensory images in poetry.

ACTIVITY/ DISCUSSION

Have students find and cut out magazine pictures of nature, plants, or animals. Have them design collages, considering not only the ***texture, shape,*** and ***color*** of each object represented, but also the ***design element***. After the collages are finished, ask each student to identify five pictures in terms of texture, shape, and color.

Brainstorm with the class the kinds of words used to discuss color, texture, and shape. Explain that words, carefully chosen to describe, can create vivid pictures of images in the minds of others. Have each student create a poem to accompany their collage.

Ask the students to discuss the form, texture, and color of their poems. Suggest that the aspects of beauty can be used in discussing beauty in nature, beauty in dance, beauty in music, and beauty in art.

"All our knowledge has its origins in our perceptions."
Leonardo da Vinci

BEAUTY IN MOVEMENT AND RHYTHM

STUDENTS WRITE AND ILLUSTRATE VARIOUS MOVEMENTS AND RHYTHMS IN NATURE.

OBJECTIVE *The students will*

observe aspects of beauty in movement and rhythms.

ACTIVITY/ DISCUSSION Explain that the three elements of beauty can also be applied to rhythms and motions. Ask students to brainstorm a list of movements and rhythms. Include ocean waves and tides, wheat fields blowing in the wind, and a leaping deer. Encourage a discussion of movement and rhythm in terms of texture, color, and form. Have students write a poem or story, or draw a picture representing the rhythm and movement of beauty. Display these creations in the classroom.

BEAUTY IN PAINTING

STUDENTS COMPARE THE ART OF VAN GOGH AND MONET.

OBJECTIVES *The students will*

be able to analyze the painting styles of Van Gogh and Monet.

be able to relate form, texture, and color to painting styles.

ACTIVITY/ DISCUSSION Show representative reproductions of Monet and Van Gogh. For each artist, discuss the art work in terms of form, texture, and color. List the words on the board under the appropriate headings.

Divide the class into groups in order to have each group present to the class a comparative analysis of art styles between Van Gogh and Monet. Have one person in the group be the speaker, have another be a notetaker of what the speaker said. These notes should be handed in for teacher evaluation.

Ask for class comments pertaining to the presentations.

INDEPENDENT STUDY

STUDENTS CHOOSE AND COMPLETE AN INDEPENDENT ACTIVITY.

OBJECTIVES *The students will*

analyze, evaluate, and synthesize information from the beauty unit.

take responsibility for their own learning by choosing and completing an independent activity.

ACTIVITY/ DISCUSSION Below are ideas for independent activities. Distribute the list to the class. Encourage students to design their own. Allow class time for student presentations.

Conclude this unit with discussion on perceptions pertaining to beauty. Ask students to list five meaningful things they learned/realized as a result of this study.

IDEAS FOR INDEPENDENT STUDY

1. Collect fabric of various weaves, colors, and designs. Display in collage form.
2. Explore pictures, seen by the imagination, in clouds. Draw and write about the images you saw.
3. Collect pictures of two or more sunsets. Write about the differences or similarities of each.
4. Write a poem or story about various rhythms and movements. For example, write about the ocean waves and tides, trees blowing in the wind, motion of violin players in an orchestra, birds flying, merry-go-rounds, jumping rope, skipping. Illustrate your story or poem.
5. Design a dance or movement which shows that you are the ocean waves, animals, trees, musical instruments. Perform for the class.
6. Experiment with the effects of various types of music on your feelings: folk songs, blues, jazz, rock 'n roll, classical. Write about what you found out.
7. Illustrate a song or piece of music of which you are particularly fond.
8. Collect pictures of various buildings and skyscrapers. Display and write about each, discussing the buildings in terms of form, color, and texture.
9. Write a short essay on "The Most Beautiful Person I've Ever Known."
10. Write a poem or story discusssing the beauty that can be found even in "ugly" things.

ADDITIONAL RESOURCES

THE WORLD OF BEAUTY

Baker, Jeffrey J.W., ***Patterns of Nature***. Garden City, NY: 1967.

Grassinger, Stephany, ***Wassily Kandinsky***. Tucson, AZ: Zephyr Press, 1982.

Grillone, Lisa and J. Gennaro, ***Small Worlds Close Up***. New York: Crown Publishers, Inc., 1978.

Harvey, Tony, ***Natural Wonders***. Octopus Publications, 1979.

Rowland, Kurt, ***Looking and Seeing*** (Series). New York: Van Nostrand Reinhold Co., 1966.

Scheffer, Victor B., ***The Seeing Eye***. New York: Charles Scribner's Sons, 1971.

Stevens, Peter S., ***Patterns in Nature***. Boston: Little, Brown and Company, 1974.

Walker, Charles, ***Wonders of the Ancient World***. New York: Crescent Books, 1980.

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Through the chrysalis, the wings of the butterfly can be seen.
The wings represent the freedom for movement and expression.
In this unit, students explore the world of art and
experience the process of creativity.
Students who have never recognized their potential may,
like the wings of the butterfly,
unfold and become visible.

THE FINE ARTS

The purpose of **The Fine Arts** unit is to broaden the students' perspective of the world of art. The activities are created to actively involve the students in art, music, drama, and dance. Students become the artists rather than the observers. The concepts to be stressed in this unit include the individual nature of art and the concept that art takes many forms.

ART

Art, in its broadest sense, is explored. The world of art is discovered through discussion . . . viewing various art forms . . . and creation of art work. Application of the concepts introduced in **THE WORLD OF BEAUTY** are expanded upon. Discussion evolves around "What constitutes art?". Students begin to see the vast area that art encompasses. Students will evaluate abstract paintings and will create their own abstract paintings. The emphasis will be on evoking feeling and character. As this creation evolves, the students will see their own creative process unfold on paper.

WHAT IS ART?

STUDENTS DEFINE ART AND PRESENT TO THE CLASS AN ITEM THAT REPRESENTS ART TO THEM.

OBJECTIVES *The students will*

understand that the concept "art" can be found in many things.

give a presentation to the class, sharing their opinion of why an item of their choice represents art.

ACTIVITY/ DISCUSSION Begin this unit by asking the students . . . ***What is art?*** . . . ***What makes something art?*** Have the class brainstorm various forms of art; for example, music, dance, literature, etc. Guide the students to include broader concepts, such as the art of listening, seeing, speaking. Develop a class definition of art. Post the definition.

Divide the class into groups of three to four students to brainstorm lists of different art forms. Allow ten minutes for this activity. Have the groups share their lists. Acknowledge the groups for the most extensive list generated, as well as the most original and unique ideas.

For the next class meeting, have students bring in a sample of something that they feel is art. Their task is to state their opinion and support why they think it is art. At the completion of their presentation, the presenter opens it up for discussion.*

***Author's Note**: When doing the activity in the past, I have had students present plants, clothing, a piece of fruit, as a representation of art. One student even presented herself as art. She received a big round of applause.

BEING AN ART CRITIC

STUDENTS APPLY ART VOCABULARY IN A DISCUSSION ABOUT PAINTINGS.

OBJECTIVE

The students will

be able to describe and evaluate a painting using the words: *line, shape, value, color, space,* and *order.*

ACTIVITY/ DISCUSSION

Distribute the handout, **An Artist's Tools** (located on the next page). Provide examples for each of the words, or have the students work in groups to define the words and provide examples. Bring examples of art into the classroom that clearly illustrate line, light, color, shape, and order. Explain that, to create order, artists use balance, rhythm, and harmony. The glossary of art terms at the end of this unit may be helpful to your students.

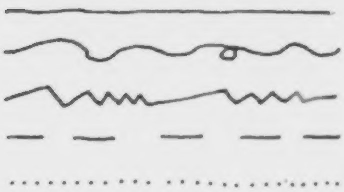
Arrange for a tour of an art gallery to see how line, shape, color, space, and order are used in art. Abstract art is especially good for this activity because it allows the viewer use of full imagination. If it is not possible to take your students to an art gallery, this same activity can be done using art reproductions.

Have students find one painting in the gallery to evaluate as an art critic might, using the art vocabulary learned earlier in this activity. Ask students to present their opinion of the artwork they evaluated to the class. Ask students to state why they liked or disliked the artwork. Open up a discussion, encouraging other students to agree or disagree.

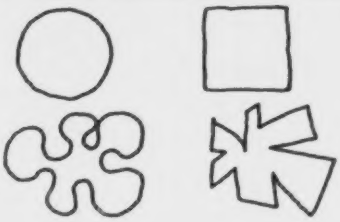
AN ARTIST'S TOOLS

Artists use the following "tools" when creating a work of art. These "tools" will help you to appreciate art when you observe it.

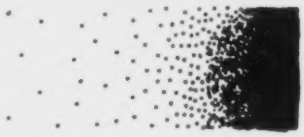
Line



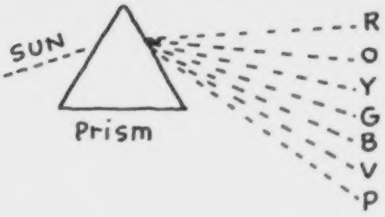
Shape



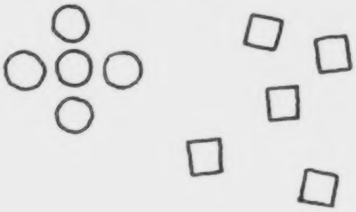
Value (light and dark)



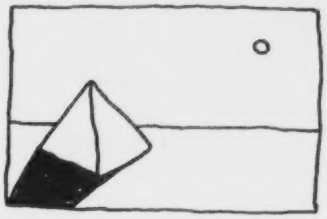
Color



Order

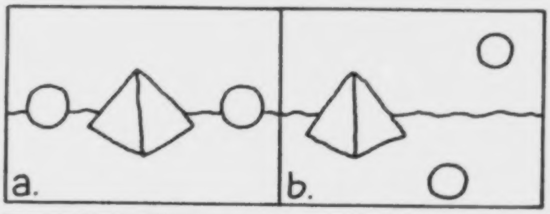


Space (and objects in it)

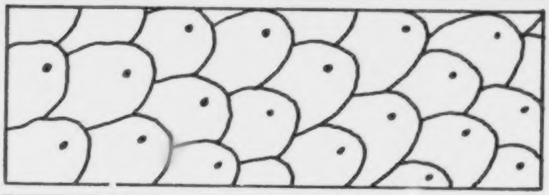


To create order, artists might use:

1. **Balance**
   a. Symmetrical — same on each side
   b. Asymmetrical — different on each side



2. **Rhythm**
   A design occurs again and again to make rhythm (repetition).



3. **Harmony**
   Fill in the space with shapes, colors, and designs that make sense with each other to create harmony.

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USING THE ARTIST'S TOOLS

STUDENTS CREATE A PAINTING USING AN ARTIST'S "TOOLS".

OBJECTIVE

The students will

be able to create an individual painting that illustrates the use of the artist's "tools".

ACTIVITY/ DISCUSSION

Divide students into groups of three or four. Brainstorm materials and tools which could be used in applying paint.

Gather together as many of these materials as possible. Examples of materials might include sprayers, air brushes, sponges, potatoes, spray bottles, and string, as well as paint brushes.

Have students experiment by applying the paint on long pieces of butcher paper using a variety of colors. When students have experimented with all the tools, have them identify two or more colors they wish to use to create an individual painting. Display the paintings in the classroom.

Hold a class discussion, analyzing each painting. Discussion should include the feeling the painting evokes, the message ascertained by the viewers, and mention of line, shape, value, space, and order.

DRAMA

The presentation of drama is intended to allow an experience of the creative process as it is involved in the expression of ones own personality. Drama provides an excellent arena for shifting thought patterns and enhancing the flexible thinking necessary to the creative process.

Using the concepts of conflict, struggle, and resolution, students will create original skits. As students pantomime and create skits, they become comfortable with using their body, voice, and the environment when expressing an idea. These activities can also enhance the students' awareness of the many ways in which they can express themselves . . . building a strong sense of self. A transfer of learning occurs as these concepts are bridged to everyday happenings. Growth occurring through change is illustrated in the "conflict, struggle and resolution" of personal living.

DO IT, BE IT, SHOW IT

STUDENTS DISCUSS THE ELEMENTS OF DRAMA AND PRACTICE CONVEYING IMAGES THROUGH PANTOMIME.

OBJECTIVE *The students will*

be able to express themselves through pantomime.

ACTIVITY/ DISCUSSION Initiate a discussion of what drama is. Ask leading questions, such as: **"What are the elements of drama?" "What are some of the different types of drama?"** Guide students to broader areas such as opera, radio plays, and trials heard in a courtroom.

Explain that one of the elements of good drama is the degree of action. Have students participate in the imagination game below. Stress that their job is to communicate an idea to the audience which requires strong concentration. Discuss the importance of maintaining character.

Do it	You are a football player You are catching butterflies
Be it	A jet plane taking off A puppet on strings
Show it	You are walking on ice with slippery shoes You are playing with your family pet

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Conflict, Struggle, and Resolution

STUDENTS DRAMATIZE SKITS USING CONFLICT, STRUGGLE, AND RESOLUTION.

OBJECTIVES

The students will

be able to understand how conflict, struggle, and resolution are used in drama.

use conflict, struggle, and resolution when dramatizing an original skit.

ACTIVITY/ DISCUSSION

Discuss with the class the elements of a good drama. To make it more meaningful, you may want to illustrate the elements of drama by using a television show common to students. Brainstorm the elements that make that show exciting. Guide the students to include in their list conflict . . . struggle . . . and resolution.

Divide your class into groups of three or four. Have the groups create a skit illustrating conflict . . . struggle . . . and resolution.

Present each skit to the class. Follow with a discussion on the use of these elements.

SOUND STORIES

STUDENTS CREATE A STORY USING ONLY SOUNDS.

OBJECTIVES

The students will

understand the use of sound effects in drama.

be able to create a sound story using the elements of conflict, struggle, and resolution.

ACTIVITY/ DISCUSSION

Have the students brainstorm twenty sounds commonly heard in their environment. Discuss the list with the class. Brainstorm another list of twenty sounds used in television shows, movies, and radio plays to produce an effect.

Have students form groups of three or four students each to create a sound story. Give each group a tape recorder and tape. Explain that they are to choose a minimum of three sounds that represent action. Instruct students to create a sound story using these sounds. Allow 15-30 minutes for the groups to plan their sound story before taping.

Play the sound stories back to the class and have the rest of the class write an interpretation of the sound stories. Discuss the interpretations with the class. What were the messages being conveyed? The groups who created the story may want to explain the intent of their sound story. Hold a class discussion to analyze the ingredients of the most interesting sound stories.

MUSIC

Over the years, music has been responsible for evoking feelings and memories. It has created moods as well as expressed concepts and ideals. Students will be introduced to a variety of music forms of the past and present day. They will research the origins of various music forms as a way to understand cultural and historical influences on the development of music. As different types of music are presented, again the student is confronted with a wide variety of perceptions . . . this time in musical preferences. The creative aspect of music is explored as students listen to Haydn's Toy Symphony . . . then create their own music, using a real or improvised instrument.

IT'S MUSIC TO MY EARS

STUDENTS DISCUSS WHAT MUSIC IS. STUDENTS LISTEN TO DIFFERENT TYPES OF MUSIC AND DISCUSS THE FEELINGS DIFFERENT MUSIC EVOKES.

OBJECTIVE

The students will

be able to analyze various styles of music and discuss what they liked or disliked about different types of music.

ACTIVITY/ DISCUSSION

Initiate a discussion on what music is. Ask students to brainstorm the elements of music. Discuss how music evokes feelings, creates moods, and elicits memories.

Play samples of jazz, classical, rock and roll, and pop music. Include music from various cultures as well. Hold a class discussion, having students share what they liked and disliked about the various types of music.

Students can also research the origins and developmental patterns of the various styles of music. Have students present their findings to the class.

HAYDN'S TOY SYMPHONY

STUDENTS LISTEN TO HAYDN'S "TOY SYMPHONY" AND IDENTIFY THE NON-MUSICAL INSTRUMENTS USED.

OBJECTIVE

The students will

understand the various ways music can be made.

ACTIVITY/ DISCUSSION

Play a portion of Haydn's "Toy Symphony". Ask students to listen to it, then comment on the music. Guide the discussion by asking students what feelings the music elicited and what other kinds of music they could compare it with.

Play the portion of the symphony again, asking students to listen carefully to the instruments being played. Have students identify the special instruments being used. Brainstorm what other instruments could be used in making music. The list may include such items as pencils on desks, slide whistles, glasses of water, etc.

Ask each student to bring to the next class meeting an instrument to make sound with. Students may bring an instrument they play or a "special" instrument brainstormed earlier.

DANCE

As defined in Webster's Collegiate Dictionary, dance is a series of rhythmic and patterned bodily movements usually performed to music. We know that this is only the mechanical aspect of dance. We respond to another more emotional, colorful side to dance.

Similar to other art forms, dance expresses abstract concepts through the creative choreography of movement intertwined with music. Students will explore various elements of movement as they are presented in any dance form. Gradually, they apply these elements in various exercises . . . and eventually become more comfortable with their bodies as instruments . . . instruments that move through, and create form in space.

DISCOVER DANCE

STUDENTS PARTICIPATE IN A DISCUSSION ON THE ELEMENTS OF DANCE.

OBJECTIVE *The students will*

be able to identify the elements of dance/movement.

ACTIVITY/ DISCUSSION Initiate this activity by asking students what dance is. Ask students to list the different types of dance, such as modern . . . ballet . . . jazz . . . broadway . . . folk . . . square . . . etc. Ask students why dance is considered a form of art. Guide students to the concept that dance is "expression through movement".

Discuss the vocabulary of the **Movement Elements** on the following page.

"Inside the child, everything is moving. Harmoniously. The eyes remain wide open, passionately involved. The arms, the legs, continue their ballet. The hands endlessly explore."

Frederick Leboyer

MOVEMENT ELEMENTS

SPACE

Self space: your own space
General space: room space
Direction: forward, backward, sideways (right, left), up, down, diagonal
Level: high, medium, low
Size: big, medium, little
Pathway: straight, curved, zig zag

TIME

Tempo: fast, medium, slow
Rhythm: even, uneven
Accent: movement or beats given more emphasis
Phrase: connected series of movements

ENERGY:

Degrees: strong, weak, tight, loose
Qualities: percussive (sharp), sustained (smooth), pendular (swinging), vibratory (shaking)

BODY PARTS:

Head, neck, shoulders, chest, waist, stomach, back, spine, hips, arms, elbows, hands, wrists, fingers, legs, knees, feet, heels, ankles, toes, etc.

LOCOMOTOR MOVEMENT:

Walk, run, leap, jump, hop, gallop, slide, skip, step-hop, polka, crawl, roll

NONLOCOMOTOR MOVEMENT

Bend, twist, stretch, swing, dodge, strike, fall, melt, sit, stand, push-pull, rock-sway, lift, shake, turn, float, burst, punch, squeeze, etc.

Adapted from ***Teaching the Three R's Through Movement Experiences*** by Anne Gilbert. Published by Burgess Publishing Co., 7108 Ohms Lane, Minneapolis, MN 55435, 1977. Used with permission.

MOVEMENT THROUGH SPACE

STUDENTS MOVE THROUGH SPACE, VARYING THEIR DIRECTION, LEVEL, SIZE, SHAPE, AND PATHWAY.

OBJECTIVE *The students will*

be able to understand that changing the manner that a dancer moves through space can change the feelings being communicated.

ACTIVITY/ DISCUSSION Explain to the students that when a large group moves together it is important that everyone finds their own "space". Ask students to run about the room in a chaotic manner. At the clap of your hands, have them find a space where they can stand with their arms out to the side without touching someone else. This is considered their "space".

Repeat the exercise one more time, having students find their space. Explain that this space should allow them to move five steps in any direction without touching one another.

Explain that you will instruct them only twice on movements you wish to elicit from them. Stress the importance of complete concentration.

Ask students to move forward, backward, sideways, up, down, and diagonally in their space. Have them change their movement each time you clap your hands. Explain that while they move forward or backward in their space, they can also vary the level. For example, students could move backwards low to the ground, then switch by moving sideways on their tiptoes.

Ask students to move in their space, changing the direction and level each time you clap your hands. Continue this exercise by adding size, pathway, and shape. At the completion of the exercise, students will change their direction, level, size, pathway, and shape to each clap of your hands.

Discuss the importance of focusing and concentration when dancing. Discuss professional dancers' lives with more understanding of the skills and concentration required of dancers.

TIMING YOUR MOVES

STUDENTS MOVE TO DIFFERENT BEATS IN MUSIC.

OBJECTIVE *The students will*

understand how tempo and rhythm affect dance.

ACTIVITY/ DISCUSSION Explain that time is another element of dance which greatly affects the outcome. Discuss tempo...rhythm...accent...phrase...as applied to dance. Have students experiment with different tempos when moving. Clap a beat with your hand, having students moving freely with their minds focused on the beat only.

Provide students with three to four different examples of music that illustrate different tempos and rhythms. Have students choose the beat to accent through movement. Have students observe each other's movements.

Discuss the fact that many students expressed different rhythms and tempos from the same music. Discuss how different movements expressed different feelings.

USING ENERGY WHEN YOU DANCE

STUDENTS PRACTICE APPLYING DIFFERENT AMOUNTS OF ENERGY TO DANCE.

OBJECTIVE *The students will*

be able to vary the amount of energy when moving to communicate different feelings.

ACTIVITY/ DISCUSSION Explain that the energy of dance can be changed by varying the degrees and qualities of the energy being exerted. Ask students to walk across the room in a normal fashion. Now, ask them to walk across the room exerting a strong degree of energy. To the clap of your hand, ask students to vary the energy of their movement from strong to weak, and from tight to loose.

Discuss the idea that energy can also be varied by changing the qualities. Have students move their arms and hands in percussive and sustained movements, as well as pendular and vibratory movements.

Ask students to express a feeling through the energy they exert when moving. The other students can guess what feeling is being conveyed.

MOVING THE BODY IN PARTS

STUDENTS PRACTICE MOVING INDIVIDUAL BODY PARTS.

OBJECTIVE

The students will

be able to move parts of their body separately from the rest of their body.

ACTIVITY/ DISCUSSION

Select a piece of music that has a 4/4 beat. Direct students to find their space and play the music while students move their whole body. Explain that, for an interesting effect, dancers will vary the body parts they move. Begin by having students move only their head to the music. Change body parts until students have individually moved every body part. This is an excellent warm-up exercise.

Now have students select two body parts to move to the music. For example, a student may choose the hips and head to move. Continue adding the number of moving body arts. Discuss how the exercise becomes increasingly more difficult as more body parts are added. Commend those who focused their energy and were able to move a number of body parts together.

LOCOMOTION

STUDENTS MOVE THROUGH SPACE, VARYING THEIR LOCOMOTOR MOVEMENTS.

OBJECTIVE *The students will*

be able to apply the different locomotor movements to their dance.

ACTIVITY/ DISCUSSION Select a piece of music that expresses action and movement. Play it for the students and ask them to move about the room, changing the way they move. Ask students to brainstorm different locomotion moves. The list may include walking, running, leaping, and skipping. Compare the list with the "**Movement Elements**" in the first activity of *DANCE*.

In advance, select two or three pieces of music that would lend themselves to different locomotor moves. Have the students move about the room freely, experimenting with the different locomotor moves. At this point, you will probably begin to notice that students are including in their movement the different elements studied previously.

Divide the class into groups of three or four. Students will work together on creating locomotor moves to match one of the selections of music used previously. Allow five to ten minutes for students to work out their moves. Have each group perform their "dance" to the class. Elicit comments from the observers regarding the feelings and ideas dancers were trying to communicate through their moves. Encourage applause after student performances.

BENDS, TWISTS, AND SHAKES

STUDENTS PRACTICE NONLOCOMOTION MOVEMENTS.

OBJECTIVE *The students will*

be able to apply nonlocomotor movements while moving.

ACTIVITY/ DISCUSSION Write the nonlocomotion movements noted on the "**Movement Elements**" list on the board. Ask students to add some of their own. Have students practice the different movements. This can be done to music or to the clap of your hand.

When students appear comfortable with the different moves, ask them to choose a "locomotor" and "nonlocomotor" movement to do together. For example, a student may choose to jump and twist in the air. The combinations are limitless. You may want to vary the music from very upbeat to smooth and fluid for differing effects.

CREATING A DANCE

STUDENTS CHOREOGRAPH AN ORIGINAL DANCE.

OBJECTIVE *The students will*

be able to apply the elements of movement when choreographing an original dance.

ACTIVITY/ DISCUSSION Discuss with the student that dancing throughout history describes human experience. Have students look at their own lives and identify a strong feeling or incident they have experienced. Some ideas are:

- moving to a new school
- disagreement with a friend
- getting a new pet, bicycle, etc.
- loss of a friend

After students have identified an experience, have them put together several steps to create (choreograph) a short dance. Encourage the use of any type of shapes, rhythms, or movements to express their feelings. Ask if there are any students who would like to share their dance with the class. If some students are having difficulty in getting started, ask them to write the feeling or incident and then create the dance.

INDEPENDENT STUDY

STUDENTS CHOOSE AND COMPLETE AN INDEPENDENT ACTIVITY.

OBJECTIVES

The students will

analyze, evaluate, and synthesize information from the Fine Arts unit.

take responsibility for their own learning by choosing and completing an independent activity.

ACTIVITY/ DISCUSSION

On the following page are ideas for independent activities. Distribute one to each student. Encourage students to create their own project. Explain that the culminating activity will be a *Fine Arts Festival*, where students will share their fine arts independent projects. You may also want to invite the parents and/or the community to the *Fine Arts Festival.*

IDEAS FOR INDEPENDENT ACTIVITIES

MUSIC:

1. Play contrasting styles of music and explain similarities and differences between the pieces to the class.
2. Create a mood through music. Play for the class and have the class identify the mood.
3. Play or sing in a musical presentation to the class.
4. Compose a piece of music and present it to the class.

DRAMA

1. Critique a dramatic presentation, such as a movie, TV show, play, or puppet show in terms of (a) how background music creates the mood, (b) how special effects make it real.
2. Create a hand puppet or shadow skit using the elements of conflict, struggle, and resolution.
3. Create a skit without words. Determine how you will communicate to your audience what is going on without words.
4. Analyze a film cartoon. Analyze how the voice fits the character. For example, how would Tweetie Bird's character change by using a deeper voice?

DANCE:

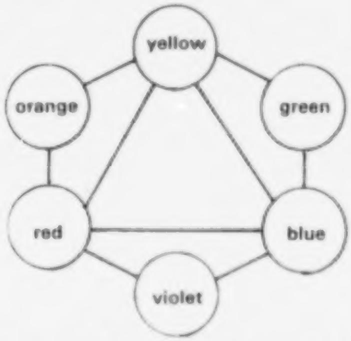
1. Instruct the class in ballet, jazz, or modern dance techniques.
2. Choreograph and perform dance movement representing nature. For example, trees in a storm or the sun rising. Choose appropriate music to accompany your dance.
3. Choreograph and perform a dance movement representing a school activity; for example, the lunch room . . . or the last ten minutes of class on the last day of school. Choose appropriate music to accompany your dance.

ART:

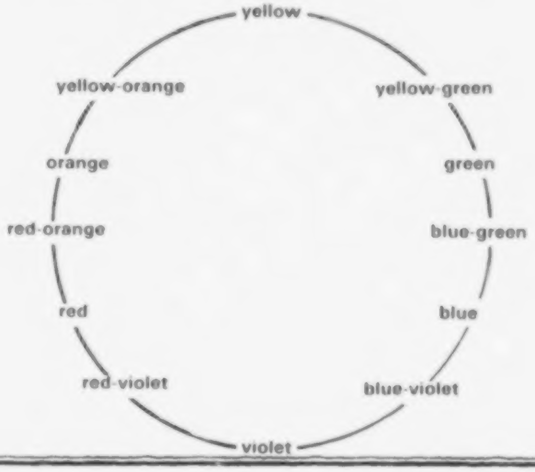
1. Create a quality piece of art. Present your artwork to the class.
2. Display contrasting styles of art and explain to the class.
3. Go to an art gallery. Record your reactions and share them with the class.
4. Share a collection of art books with the class.
5. Conduct an art lesson with the class.

GLOSSARY OF ART TERMS

Primary colors:	red, yellow, blue Primary colors cannot be formed by mixing other colors.
Secondary colors:	orange, green, violet Secondary colors are formed by mixing any one of the three primary colors with either one of the other two in equal amounts.
Standard colors:	red, orange, yellow, green, blue, violet (See diagram below.)


yellow
orange
green
red
blue
violet

Intermediate colors:	yellow-green, blue-green, blue-violet, red-violet, red-orange, yellow-orange Intermediate colors are formed by mixing any two colors that are adjacent to each other in the diagram above.
Basic Color Wheel:	The twelve primary, secondary, and intermediate colors arranged as illustrated in a circular diagram, showing the relationships of the colors.


yellow
yellow-orange
yellow-green
orange
green
red-orange
blue-green
red
blue
red-violet
blue-violet
violet

Glossary of Art Terms (continued)

Achromatic:	colorless — neutral — black, white, gray
Center of interest:	the most important part of a picture
Complementary colors:	colors that lie directly opposite each other on the color wheel (One hue dominates, the other provides contrast. Greatest degree of contrast between hues exists between the complementary colors, which are thus complementary colors.)
Cool colors:	blue, green, violet (Cool colors seem to recede; will appear to reduce size. Cool colors are calm, restful. Too much cool may be depressing.)
Gradation:	process of manufacturing colors (For example, equal amounts of red and yellow produce orange. One gradation of orange can be obtained through using one part red and 99 parts yellow. The amount of red can be increased progressively by one part, while decreasing the amount of yellow by a corresponding part. 100 gradations of orange can be produced between red and yellow in this way.)
Hue:	the term used to indicate the name of the color, such as red, blue, etc.
Intensity:	the brightness or dullness of a color (the degree of grayness in a color—the smaller the amount of gray in a color, the greater the intensity, and vice versa.)
Monochromatic:	one color on the color wheel which is varied in value and intensity to achieve a monochromatic color scheme
Overlapping:	when one figure or object is partly in front of another
Shade:	a color value darker than the normal value of a pure color (hue plus black)
Tint:	a color value lighter than the normal value of a pure color (hue plus white)
Value:	the lightness or darkness of a hue (A light color such as yellow is high in value; i.e., closer to white. A dark color such as a violet or blue is low value; i.e., closer to black.)
Warm colors:	red, orange, yellow (Warm colors seem to advance and are most conspicuous. Warm colors will make an object appear larger and nearer to the observer. Warm colors are cheerful and stimulating. Too much color may be exciting and loud.)

From *Art Curriculum Guide*, Issaquah School District No. 411, Issaquah, WA, 1981.

ADDITIONAL RESOURCES

THE FINE ARTS

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Athey, Margaret and G. Hotchkiss, ***A Galaxy of Games for the Music Class***. West Nyack, NY: Parker Publishing Co., Inc., 1975.

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Carr, Rachel, ***Be a Frog, a Bird, or a Tree***. New York: Doubleday and Co., Inc., 1973.

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Fitzgerald, Burdette, ***World Tales for Creative Dramatics and Storytelling***. Englewood Cliffs: Prentice-Hall, Inc., 1962.

Gensemer, Robert E., ***Movement Education***. Washington, D.C., National Education Association, 1979.

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Hanks, Kurt and L. Belliston, ***Draw:* A Visual Approach to Thinking, Learning, and Communicating**. Los Altos, CA: William Kaufmann, 1977.

Hansen, Brian K., ***A Curriculum Model for Theatre in Aesthetic Education***. St. Louis, MO: Aesthetic Education Program, 1972.

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6

As the chrysalis bursts, the metamorphosis complete, the butterfly emerges, seeing the world for the first time. This unit attempts to broaden the students' perspective of the world, providing the tools necessary to creatively solve problems. Effective problem solving requires the students, like the transformed butterfly, to view the problem as if seeing it for the first time.

BEST COPY AVAILABLE

Understanding World Problems

Understanding World Problems is designed to increase the students' awareness of social situations and conditions. Students will be exposed to perceiving problems from an objective viewpoint through researching the specifics of a given situation. By deferring their judgement until all data is collected, the students will decrease the probability of making judgements that are altered by emotions or incomplete data. This unit provides the students with the tools to creatively solve problems, possibly enabling them to effect change in the future.

CREATIVE PROBLEM SOLVING

The nature and interrelatedness of problems that confront the world today is illustrated in this section. With the use of visualization, creative, analytical, and evaluative techniques, students attempt to resolve a world problem of their choice.

The activities presented here assist students in seeing problems . . . understanding both the positive and negative effects of a solution . . . as well as the impact a given solution may have on associate areas. The creative problem in the first unit is again used.

SEEING WORLD PROBLEMS

STUDENTS PARTICIPATE IN A VISUALIZATION ACTIVITY.

OBJECTIVE *The students will*

be able to visualize how problems can affect the environment in which they live.

ACTIVITY/ DISCUSSION Narrated below is a visualization technique involving students in seeing how problems facing the world affect our lives. This visualization attempts to guide the students in perceiving world problems.

This activity is called ***Problems****. Imagine the world problem, overpopulation...Imagine that the problem is so large and so clear that the extension of that problem can clearly be seen in your school and community.....*

Image your classroom. Have it empty...No one in the seats...No one at the teacher's desk...No one at the blackboard...Look all around the school room, seeing no one there......

Now, your classroom is normal, a thirty-desk size. A teacher is teaching...Everyone is doing their lessons......

Now, your classroom is crowded with 75 desks. A teacher is teaching...All the classes in your school are filled...All the students from every classroom go out to recess together...What are you playing?... Now all the students are going to the cafeteria...How are you being served?...What kind of food are you eating?......

Now, everyone goes back to their classrooms. What do you see now? ...Hear the intercom announcing that the next recess will be cancelled because of the high pollution content in the air...What happens now? ......

Your school is still crowded. Now, image your community, state, country, and world as crowded. Walk to a grocery store...What are the products and prices?...Look at the headlines on a daily newspaper...What are they?......

Now, imagine one other major problem affecting the world...What is the name of this activity?"

Ask the students to name the problems they saw. List these on the board.

CREATIVE PROBLEM SOLVING

STUDENTS DESIGN AND CONSTRUCT MOBILES SHOWING A PROBLEM SOLVING TECHNIQUE.

OBJECTIVE

The students will

be able to list the steps of problem solving.

ACTIVITY/ DISCUSSION

Review the steps of problem solving introduced in the first unit. In that unit, the students applied the problem solving process to solving a personal problem. In this unit, students will apply the process to a world problem.

Introduce the subject of problem solving by writing the steps on the board, using an example such as world hunger, overpopulation, or pollution. Give examples of application for each step.

Step 1 **Identify the problem.**
Discuss something that could be improved in the school or community.

Step 2 **Fact-finding.**
Discuss the following: When exploring a problem, everyone perceives the problem differently. This results in varied reactions and interpretations of the problem. Obtaining data and information on the specifics of a problem leads to objectivity. It also eliminates, to a certain extent, emotions and viewpoints which may cloud the viewers' perception of the problem.

Step 3 **Problem-finding.**
Discuss the mini , sub, and contingent problems. For example, if the situation is world hunger, mini, sub, and contingent problems might include overpopulation, inadequate medical facilities, lack of nutritional awareness, and problems of food distribution. Establishing a list of sub-problems makes it easier to evaluate which problem has the greatest priority.

Remember, it is generally easier to attack the problem if it is stated in question form. For example: In what ways might we increase the quality of medical facilities in underprivileged areas? How might we equalize food distribution world-wide?

Step 4 Idea-finding.
Remind the students that the more ideas generated, the better.

Step 5 Solution-finding.
This is the step that includes the generation of criteria when evaluating solutions. Criteria provides an objective decision making process when evaluating which idea is the best solution. Criteria should represent factors related to the problem. For example, if the major problem was food distribution, criteria might include such questions as:

Is it financially feasible?
Will it produce results in the future?
Is it an improvement over what is currently being done?
Is it compatible with existing technology?
Will it be accepted by the public?

Solutions can be evaluated using the sample "**Evaluation Grid**" on the next page.

Step 6 Acceptance-finding.

Now, the logistics of implementing the solution come into play. This is the point at which the questions, *Who? What? When? Where? Why?* and *How?* should be addressed. Acceptance-finding includes creating a step-by-step implementation plan that lists who will participate, a timeline of the steps involved, and what resources will be used, such as media, governmental organizations, and/or private businesses to carry out the solution.

Once the class has followed the steps and questions have been answered, have the students make a mobile of the creative problem solving process for classroom decorations. Provide construction paper, yarn or string, glue, and crayons or markers.

Adapted from ***CPS for Kids***, by Bob Eberle and Bob Stanish. Published by D.O.K. Publishers, Inc., Buffalo, NY, 1980. Used with permission.

EVALUATING YOUR SOLUTIONS

Choose five of your best solutions. List them on the grid below. Insert the criteria and evaluate each solution with the criteria. Solutions may be evaluated on a scale of 1-5, one being the poorest and five being best. The solution with the highest number represents the best solution based on the criteria used.

	a.	b.	c.	d.	e.	f.	
SOLUTIONS			CRITERIA				TOTAL
1.							
2.							
3.							
4.							
5.							

NO PROBLEM STANDS ALONE

STUDENTS BRAINSTORM SUB-PROBLEMS TO MAJOR WORLD PROBLEMS.

OBJECTIVE *The students will*

be able to understand how world problems are interrelated.

ACTIVITY/ DISCUSSION Explain to the students that no problem stands alone. Have the class brainstorm a list of problems facing the world. Give an example by choosing a problem and asking students to brainstorm related problems.

For example, the main problem of world hunger has many related problems, such as overpopulation, climate changes, population concentration, problems of distribution, malnutrition, and disease. Each problem creates or manifests the other.

Divide the class into groups, giving one major world problem from the list to each group. Have each group brainstorm all the related problems that accompany the major world problem. Students can complete the following worksheet for presentation to the class.

NO PROBLEM STANDS ALONE

GROUP ____________________

A. Problem ____

____

B. List all the problems you can think of that relate to the problem listed above.

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____
11. ____
12. ____
13. ____
14. ____
15. ____

YOUR SOLUTION

STUDENTS DESIGN AN INVENTION.

OBJECTIVES *The students will*

evaluate past inventions.

be able to choose one problem that needs correction and will then design an invention in an attempt to correct it.

be able to assume the role of inventor.

ACTIVITY/ DISCUSSION Begin the discussion by brainstorming inventions that have benefitted humankind, such as television, automobiles, etc. Assign an invention to each student, asking them to list the positive and negative impacts the invention has on society. This will help to assess the true benefit the invention provides society. For example:

AUTOMOBILES

Positive	**Negative**
Cut down travel time	Air pollution
Independence	Traffic deaths
Increased mobility	Costly

Then, ask if anyone had an invention which was totally beneficial to society. Discuss the importance of forecasting when creating inventions.

Brainstorm existing problems facing the world. Have the students create inventions which would eliminate the "problem of their choice" and would benefit society. The invention should be diagrammed with blueprints and explanations.

Stress to students that not all world problems can be solved through inventions. Solving world problems includes changing attitudes and sometimes the ways of people.

CREATIVE PROBLEM SOLVING & WORLD PROBLEMS

Each student is given an opportunity for independent exploration and application of the creative process to a self-selected world problem. After identification of the problem, students will research the situation in order to truly understand the impact of the problem on society. Through the type of research necessary in successfully carrying out this project, students will find a need for new, different, and more professional research methods. This may include interviewing people, writing to organizations, and conducting surveys, as well as studying magazines and newspaper articles. Higher level thinking skills are encouraged. Creativity is emphasized as an integral aspect to solution-finding.

As students present their solutions to the class, they receive feedback and may gain new perspectives surrounding their proposed solutions. To further emphasize follow-through and involvement in community, national, and international problems, students can be encouraged to implement their solutions as a practicing professional would. For example, they may want to present their solution to an individual and/or organization that could provide them with input or perhaps even implement the solution.

SOLVING WORLD PROBLEMS

STUDENTS WORK INDEPENDENTLY ON A PROBLEM SOLVING PROJECT FOR A TWO-WEEK PERIOD.

OBJECTIVE

The students will

be able to apply the creative problem solving process to solving a world problem.

be able to work independently on their projects.

ACTIVITY/ DISCUSSION

Introduce this activity by having students identify a world problem that they would be interested in attempting to solve. Explain to them that this will be a two-week project (although project length may vary) in which their classroom time will be spent working on their problem solving project.

The **Project Activity Schedule** includes the steps and activities to be completed in this proejct. Have students begin a folder which will include their work. This makes it easier to check the students' progress during conferences. Regular conference times for students should be scheduled to monitor their progress.

PROJECT ACTIVITY SCHEDULE

1. **Identifying the problem.**

   Students identify the situation that is in need of improvement.

2. **Fact-finding.**

   Students develop a data collection procedure and timeline. Various data collection procedures include surveys, interviews, writing letters, telephone calls, field trips, books, newspapers, and periodicals. Have students outline the specific ways in which they will gather information, including approximate dates each will be accomplished. Have students document each telephone call and visit by writing a brief summary of the outcome, persons with whom they corresponded, as well as the date of contact. These will be used later when writing the final paper. A conference should be scheduled with each student to check their data collection procedure before they begin their research. Discourage students from doing their research only out of an encyclopedia. Encourage the use of "people resources" and newspaper and magazine articles.

3. **Problem-finding.**

   Once the data and information regarding the problem has been collected, students are ready to identify the specific problem they will attempt to solve through brainstorming sub-problems, mini-problems, and contingent problems related to the situation. Students then decide which of the problems they will attempt to solve and state it in question form. Once again, a conference should be scheduled with each student before they continue.

4. **Idea-finding.**

   Students attempt to generate a large number of solutions to the problem. A minimum of ten solutions could be required to encourage more options.

5. **Solution-finding.**

   Students generate a list of criteria to evaluate the solutions. Students then choose the top five solutions and place them on a copy of the grid on page 161. Evaluate your solutions.

6. **Acceptance-finding.**

Students develop an implementation plan for carrying out the solution. Students will examine the many ways the solution could be implemented in order to best solve the problem selected. This involves brainstorming ways to accomplish the plan. Questions such as, *Will the media be involved? . . . Will businesses or professional agencies be utilized? . . . Who will carry out the plan? . . . The student?... Celebrities?...Churches?...The President?...The legislature? . . .* should be asked. From these lists, students will draft a plan to carry out the solution.

7. **Final paper.**

The students' final paper should include the following:

a. **Introduction.** Stating the problem, who it affects, the history of the problem, where it occurs, and their opinion of why it needs to be improved.

b. **Problem statement.** Stating the major problem and why the writer considers that problem to be the most important.

c. **Proposed solution(s).** Outlining the proposed solution(s).

d. **Implementation plan.** Outlining how the solution will be carried out, listing the specific steps and people to be involved in order to effect a change.

e. **Evaluative statement.** Expressing why this proposed solution would solve the problem.

Allow class time for students to present their solutions. Encourage students to provide input and/or elaborate upon the solutions presented.

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INDEPENDENT STUDY

STUDENTS CHOOSE AND COMPLETE AN INDEPENDENT ACTIVITY.

OBJECTIVES *The students will*

analyze, evaluate, and synthesize information from the problem solving section.

take responsibility for their own learning by choosing and completing an independent activity.

ACTIVITY/ DISCUSSION Below are ideas for independent activities. Distribute copies to the students.

IDEAS FOR INDEPENDENT STUDY

1. Design an automobile that does not depend on gasoline for fuel.
2. Create a World Peace Organization. Outline how the representatives would be selected. Develop goals and objectives the organization will attempt to meet.
3. Develop a mass transportation system that is energy efficient.
4. Devise a filter system to be used by industries to reduce the amount of pollution.
5. Devise a plan that would dispose of nuclear waste in a safe manner.
6. Develop an Agriculture Awareness Program to defeat famine.

ADDITIONAL RESOURCES

UNDERSTANDING WORLD PROBLEMS

Brown, Marilyn, E. Babcock, and B. Lewis, ***A-Way With Problems—Specific Skills for Solving Problems Creatively***. La Habra, CA: Foxtail Publishing Co., 1979.

Eberle, Bob and B. Stanish, ***CPS For Kids***. Buffalo, NY: D.O.K. Publishers, Inc., 1980.

Human Relations Curriculum Development Project, Unit II, Prejudice, Justice, Poverty, and Religion. Cleveland, OH: The Pace Association, 1969.

Kaplan, Sandra N., and S.K. Madsen, ***Think-ins: An Approach to Relevant Curriculum, Stresing Creative Thinking and Problem Solving***. South El Monte, CA: Creative Teaching Press, Inc., 1974.

Mehlinger, Howard et al, ***Global Studies***. Washington, D.C.: National Education Association, 1978.

Millar, Jayne C., ***Focusing on Global Poverty and Development***. Washington, D.C.: Overseas Development Council, 1974.

Vezza, Therese and M.T. Bagley, ***The Investigation of Real Problems: A Teacher's Handbook for Developing Higher Level Thinking Skills in Gifted and Talented Children***. Woodcliff Lake, NJ: Educational Institutes and Consulting Assoc., Inc., 1979.

7

The butterfly, free of the chrysalis, clings to the branch. It works on building its wings to full size, which readies it for flight. In this unit, the students develop their "minds" through creating a future for tomorrow.

A World for Tomorrow

A World for Tomorrow is intended to provide students with the opportunity to create a desired future . . . one hundred years from now. This unit incorporates independent study, creative thought, group interaction, and problem solving. Emphasis is placed upon creating an ideal future which would eliminate many of the problems facing the world today. In this unit, students work as a group to create a future. Presentation of their future includes models, diagrams, creative writing, skits, and a future newspaper.

Exploring The Future

The mind-boggling changes on our planet are inspiring a great emphasis on the study of the future. This well-founded concern and its exploration requires specific techniques which include strategic and creative thinking. When exploring the future, all of the thinking skills discussed previously can be applied. Students begin by viewing the future as it relates specifically to themselves. Through visualization, they form a mental image of their future work, their education, and transportation systems. By analyzing characteristics inherent to futuristic thinkers such as Leonardo da Vinci and Buckminster Fuller, they begin to identify the characteristics of strategic and creative thinking. Students will analyze and discuss various predictions for the future and are then introduced to several techniques used by futurists. Students will analyze past, present, and future trends, then develop a "futures wheel" enabling them to see the impact of one trend upon other areas of society.

YOUR FUTURE PROFILE

STUDENTS FILL OUT THE FUTURE PROFILE SHEET ON THE NEXT PAGE.

OBJECTIVE *The students will*

be able to project themselves into the future.

ACTIVITY/ DISCUSSION Explain that, in this activity, the students will imagine themselves in the future, one hundred years from now. Ask them to close their eyes and imagine themselves entering a time machine.

"The dial is set for one hundred years from now. The door slowly closes and the red light comes on, indicating 'time travel' . . . Imagine yourselves traveling through time until you move forward in time one hundred years from now . . . The green light comes on and the door slowly opens, revealing the future . . . See with your mind's eye the future . . . What do the cities look like? . . . What are people wearing? . . . Explore your future, then slowly come back to the present . . . ."

Distribute **"The Future As You See It"** and have the students complete it.

Invite students to share their responses and discuss the similarities and differences of each. How does the future differ from student to student?

Post the worksheets on a bulletin board display.

"Other generations believed that they had the luxury of preparing their children to live in a society similar to their own. Ours is the first generation to have achieved the Socratic wisdom of knowing that we do not know the world in which our children will live." Foundations of Futureology in Education

THE FUTURE AS YOU SEE IT

ONE HUNDRED YEARS FROM NOW

Create the future as you see it by filling in the following form. Try to include information for every item listed.

1. List four new jobs that may be available.

   1. ______________________ 3. ______________________

   2. ______________________ 4. ______________________

2. Write down what you think the average income will be.

   ____

3. Describe what people will do for recreation.

   ____

   ____

   ____

   ____

4. Describe the housing that will be used.

   ____

   ____

   ____

5. Describe what education will be like.

   ____

   ____

   ____

   ____

6. Describe the type of transportation systems.

   ____

   ____

   ____

PREDICTING THE FUTURE

STUDENTS MAKE PREDICTIONS FOR THE FUTURE.

OBJECTIVE *The students will*

be able to imagine events in the future.

ACTIVITY/ DISCUSSION Instruct the students to write ten predictions of what will happen in the next one hundred years. Then, ask them to compare their list to the "**Future Chronology**" listed on the following pages.

FUTURE CHRONOLOGY

1984

- The XXIII Summer Olympics, staged in Los Angeles, goes on. Maybe.
- The United States elects a president.
- The risk of nuclear war peaks, with Central Europe and the Middle East presenting special dangers.

1985

- Israel formally annexes the West Bank and the Gaza Strip.
- People work a four day, 32-hour week.
- Most family homes have installed flushless toilets that compost wastes. (One brand of toilet uses a sound track that makes a flushing noise whenever the toilet lever is pressed, even though no water is used in the system.)
- Your home television set has 300 channels.
- Using expensive digital synthesizers, if you are able to play one musical instrument, you are able to play any instrument.
- A national health insurance goes into effect in the U.S. This federal insurance covers ninety percent of your medical costs.
- The U.S. government nationalizes all gasoline stations.
- Gasohol totally replaces gasoline for use in motor vehicles.
- A private company, selling to any customer, launches a satellite into space. The company's first customer is China.
- Halley's Comet soars through the skies once more. It is most clearly seen in November and December.

1986

- The People's Republic of China places an astronaut into orbit and becomes the third nation with a man in space.
- A computer program beats the world chess champion.
- Colombia hosts the thirteenth World Cup Soccer Championship.
- The majority of working people are on Flextime — setting their own hours for going to work and leaving work.
- Sirhan Sirhan, who was convicted of murdering Robert F. Kennedy, comes up for parole.

1987

- Most courtrooms are open to television coverage. Criminal and civil courtroom proceedings are so popular they have replaced soap operas and game shows.
- Your television screen can project three-dimensional pictures through the use of laser photography.
- A bottle of hard liquor costs $125, a double martini at a bar costs $20, and a pack of cigarettes costs $5.
- The British sport of cricket becomes a national sport in the U.S.
- A computer chess champion proves superior to almost all grand master human chess players.
- The bicentennial of the signing of the U.S. Constitution is celebrated.
- Since winters in the eastern U.S. have become harder, almost all large corporations are transferring their headquarters to California and Florida.
- One of three California cities, either San Diego, Los Angeles, or San Francisco, suffers several destructive earthquakes along a major fault line.
- A locust plague sweeps the eastern U.S.
- The U.S. public school system collapses and is replaced by one-room, local schools in every neighborhood.
- A woman priest is ordained in the Roman Catholic Church.
- New scientific experiments prove that Einstein's Theory of Relativity is partially wrong.
- In South Africa, black resistance increases as black leaders resort to urban terror. The white government makes dramatic concessions to blacks in social and economic fields, but the whites continue to hold military and political power.

1988

- The track record for the mile is now 3 minutes 32 seconds.
- Women compete in the Olympic marathon for the first time.
- A 1,000-seat jetliner has its inaugural flight.
- Most laborers working on assembly lines are replaced by robots.

FUTURE CHRONOLOGY

(1988-Continued)

- West Germany and East Germany fight an undeclared war. No other nation is involved.
- Both the U.S. and the U.S.S.R. invade Iran, the Russians occupying the Iranian provinces of East and West Azerbaijan and the Americans landing on the northern coast of the Strait of Hormuz. The incident ends peacefully.
- A terrorist group gets its hands on an atomic bomb.
- A U.S. presidential election is held.
- The first human being is cloned.

1989

- The median age in the U.S. is 32.5.
- Roger Maris' homerun record of 61 is broken. Someone hits 63.
- Weather forecasting achieves accuracy for 30-day periods.
- A computer makes an original scientific discovery and its program is nominated for a Nobel Prize.
- Because of excessive unemployment caused by increasing automation, work riots occur in most industrialized nations.
- Nuclear war breaks out between India and Pakistan, destroying major population centers.

1990

- Spanish joins English as an official language in the U.S.
- Parts of Texas and California split off to form new states.
- Vegetarians outnumber meat eaters in the U.S.
- Most large corporations provide paid educational sabbaticals.
- Control of outer space shifts from civil to military authority in the U.S. NASA gives way to the U.S. Department of Defense.
- A male astronaut in outer space shoots and kills a crewmate in an argument over a woman.
- All school buildings vanish as students receive their education from portable communications-linked appliances that are cast on pieces of silicon.
- Every automobile is equipped with microcomputer sensor and control actuator for self-operation by voice command. Also, every car is equipped with collision-avoidance electronic gagetry.
- Wrist telephones are popular.
- Daily body check-ups by computer provide ample warning of any impending illness.
- In the past ten years, heart disease has decreased thirty-seven percent because of improved diet and increased exercise.
- Diabetics have pumps implanted in their bodies to feed them insulin automatically as they require it.
- Artificial eyesight is invented for blind people.
- Chemicals are produced that arrest senility in the aged.
- The Communist government of the U.S.S.R. is overthrown by a social democratic faction working inside the party.

1992

- The common cold is treated successfully with interferon.
- The first human is brought back to life after being frozen and thawed.
- Twenty-seven percent of Americans are illiterate. (It had been one percent in 1980.)
- More than ninety percent of the households in the U.S. play electronic television games for recreation.
- The average secretary earns $25,000 a year, but inflation continues to soar.
- Four or five women judges are on the U.S. Supreme Court.
- U.S. presidential election is held.

1993

- After a U.S. stock market crash and major depression, the U.S. ceases to be a great power. The U.S.S.R. dominates most of the world.

1995

- A do-it-yourself device for music lovers comes on the market. You can buy an electric baton and conduct a recorded orchestra, actually controlling the tempo and volume of the music.
- Ceremonies celebrate the fiftieth anniversary of the signing of the U.N. charter.

1996

- U.S. presidential election is held.
- In order to protest the rising rate of cancer among their ranks, workers set off a series of nuclear "accidents" at several nuclear power plants.

FUTURE CHRONOLOGY

1997

- Most U.S. companies install locker rooms and give time off for exercise.
- The long time British lease on Hong Kong expires, and Hong Kong reverts to Chinese control unless the lease is extended.

1998

- First tourist service to outer space. All seats are booked a year in advance.
- A special gadget built into men's suits and women's dresses enables people to change the color, pattern, and shape of their garments.
- Israel celebrates its fiftieth anniversary of independence.

1999

- The capitol of the U.S. moves from Washington, D.C. to Minneapolis, Minnesota.
- Pluto regains its position as the outermost known planet in our solar system, a position Neptune had held for twenty years.
- On December 31, the U.S. turns the Panama Canal over to Panama.

2000

- More than 600 million people are living in absolute poverty. More than half the world's population is living in cities.
- Most couples live together before getting married.
- According to the Library of Congress, in this year all nonfiction books published between 1900 and 1940 will be disintegrating because of acid in their paper, poor quality ink and pollution, and will be rendered useless.
- Computer printout terminals in every neighborhood publish and bind any book while you wait.
- Presuming no preventive action has been taken, the noise level on U.S. highways this year will be fifty percent greater than it was in 1980.

2001

- Almost all illnesses are treated electromagnetically. Body cells are "fooled" into producing antibodies, coagulants, new tissue, and chemicals when they are exposed to certain kinds of electric and magnetic fields. This drugless treatment revolutionizes medicine.
- All Persian Gulf countries run out of oil. Most new autos everywhere on Earth use alcohol or liquids converted from farm and forestry waste. On such fuels, each car gets 100 miles to the gallon.
- A shortage of oil starts a large scale migration of people from cold parts of the world to warmer parts.
- The world's oceans are being used extensively as a source of minerals and energy. Ocean floor and subfloor mining is accomplished by automated systems and remotely controlled robots.
- More than ninety percent of persons over 16 will recognize that a Power Control Group (including Allen Dulles, Lyndon B. Johnson, J. Edgar Hoover, some members of the U.S. Joint Chiefs of Staff, and others) conspired to murder President John F. Kennedy; probably arranged the assassinations of Robert Kennedy and Martin Luther King; tried to assassinate George C. Wallace; probably assassinated Adlai Stevenson, Walter Reuther, and others.
- A U.S. presidential election is held.
- Fifty thousand people are living and working in space.
- The first children are born in a space colony orbiting Earth.
- An interplanetary ship brings back to Earth an alien virus that kills a tenth of the world's population.

2002

- If caught in the early stages, every type of cancer is now curable.

2005

- All the walls of your living room are video screens. You can activate Dial-an-Environment and have the interior of the Taj Mahal projected on the screen so that you will feel you are inside the mausoleum.

2010

- A robot can now cross a busy highway without being hit.
- Football coaches still direct their teams from the bench, but their teams consist of robots.
- Because of worsening inflation, the U.S. issues a new currency to soften the impact of higher prices. Many realistic people turn to barter.
- There is an open market for used and reconditioned human body parts.

FUTURE CHRONOLOGY

- An artificial brain—as complex as the human brain—proves to have conscious thought and emotions.
- Authoritarian governments in various nations are using mind and behavior control chemicals on their subjects to suppress dissent.
- The U.S.S.R. attempts to change its history by using tachyons, particles that can carry information backward in time.
- The black pope of Rome transfers the central seat of the church to the holy city of Jerusalem.
- International terrorists, employing nuclear weapons, destroy a major world capitol. This leads to police repression, which, in turn, leads to world-wide disarmament conferences. As a result, all nuclear weapon systems are scrapped.
- One million people are living permanently in space colonies.

2011

- Japanese investors open factories in the South Bronx in New York City.
- The U.S. passes laws banning the use of white flour, salt, artificial colorings, artificial flavorings, and all additives in food.
- Polio has been totally eliminated in all Western countries.
- In South Africa, black revolutionary developments promote the intervention of the superpowers. This development will ultimately lead to majority rule.
- Following the collapse of the U.S. economy, there is a civil war in the U.S.
- The majority of people leaving Earth for permanent jobs in outer space are no longer male but female.
- The first hominid with upright posture, almost 8 million years old, is found near the Swailik Hills, in India.

2015

- The American Medical Association is disbanded.

2017

- The first total eclipse of the sun since 1979 is observed by the people of the U.S. and Canada.
- A U.S. spacecraft reaches Mars, moves over the planet, and picks up samples of soil, which are examined in an orbiting Spacelab to avoid contamination of Earth. A sensational discovery—the fossil of a tiny creature—is made, proving that Mars once possessed life.

2020

- Newly married couples are spending their honeymoon on the moon.
- A robot is developed with an IQ above 100.
- Earthquakes are prevented by injecting water into wells along fault lines.
- Nighttime is eliminated from the Earth. Through the use of solar satellites which store the sun's rays, nights are fully illuminated. For the first time in history, people enjoy 24 hours of daylight.

2025

- During the winter of this year, an unidentified and particularly lethal influenza virus appears in India, leapfrogs to Southeast Asia, and attacks Europe and the U.S. Thousands die. The virus burns out in six months. The only people spared are those living in Argentina, Chile, and sub-Saharan Africa.

2027

- Sealed in the U.S. National Archives for more than 50 years, the secret tapes made of Martin Luther King, Jr. by J. Edgar Hoover and the FBI are finally released to the public. These tapes, made by FBI bugging devices and wiretaps placed in King's home, office, and hotel rooms, sought to compromise him by exposing alleged sexual activities.

2030

- The average secretary earns over $600,000 a year, but $10 will hardly buy a cup of coffee.
- Computers and robots have become more intelligent than human beings, and they make major economic, social, and technical decisions using reasoning that is beyond human comprehension.
- Antarctic icebergs are being melted to relieve water shortages.
- Advances in human understanding of crystal structures enable us to grow buildings.
- The average consumer is able to trade in his or her body for a custom-built model.

FUTURE CHRONOLOGY

- People under 21 years of age are no longer deformed, sick, stupid, neurotic, undernourished, or ugly.
- The average human being lives to an age of 120 or more.
- Despite decades of experimental work, scientists have failed thus far to see *inside* the atom and to demonstrate the existence of gravity waves.
- A democratic U.S. of the World is established. All wars are outlawed.
- Nuclear weapons stockpiled by the world's armies are sent into space to capture asteroids and bring them into orbit around the earth. The asteroids are used as raw materials for the industrialization of space.
- More than 250 million people are living on High Orbital Mini-Earths (HOMES). Of these, 100 million were born on new worlds.
- Spacekind issues a Declaration of Independence from Earthkind.

2087

- A young physicist develops a unified field theory (first proposed by Einstein 150 years before) that provides the theoretical basis for faster than light travel.

3000

- More people are living in space than on Earth.

Abridgment of "A Chronology of the Future" from THE BOOK OF PREDICTIONS by David Wallechinsky, Amy Wallace, and Irving Wallace. Copyright © 1981 by David Wallechinsky, Amy Wallace, and Irving Wallace. Used with permission of William Morrow & Company.

FUTURES WHEEL

STUDENTS CREATE A FUTURES WHEEL SHOWING HOW DEVELOPMENTS IN ONE AREA AUTOMATICALLY LEAD TO DEVELOPMENTS IN OTHER AREAS.

OBJECTIVE

The students will

be able to visualize the impact of a forecast in one area on another area.

ACTIVITY/ DISCUSSION

Initiate this activity by discussing the impact that developments in one area have on other areas. Take the forecast of "more people" and have students brainstorm the impact this forecast may have on other areas, such as "more cars" . . . "more pollution" . . . and "more sickness". Talk about the interrelationship of each and the importance of perceiving the impacts a development or forecast may have in other areas.

Pass out the **Futures Wheel** activity sheet, found on the next page. Have students make their own "futures wheel" using a 24" × 24" piece of paper.

When students complete their **Futures Wheel**, discuss them. Display them as a group.

"The future is bound to surprise us, but we don't have to be dumbfounded." —Kenneth Boulding

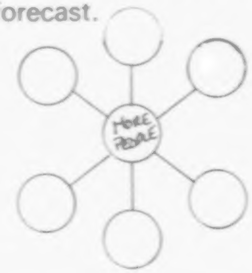
FUTURES WHEEL

In this activity, you will create a "Futures Wheel"[1]. The wheel's function is to help you visualize the impact of a forecast in one area on another area. For example, if a forecast is "more people", the wheel should show such impacts as "more cars", "more pollution", and "more sickness". The finished Futures Wheel will demonstrate how developments in one area automatically lead to developments in other areas. Follow these steps to make your Futures Wheel:

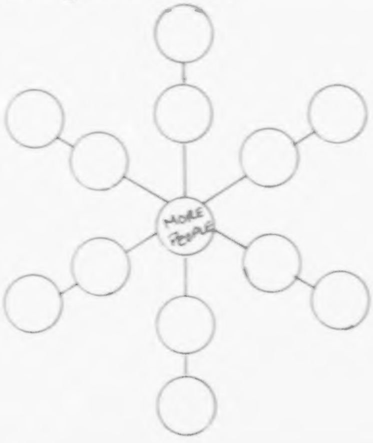
1. Draw a large circle in the middle of a large piece of paper. Within the circle, write a forecast, such as "more people".

MORE PEOPLE

2. Draw spokes from the first circle and at the end of each spoke draw another circle. Within each of these circles, write a forecast which you think will be a direct consequence of the initial forecast.

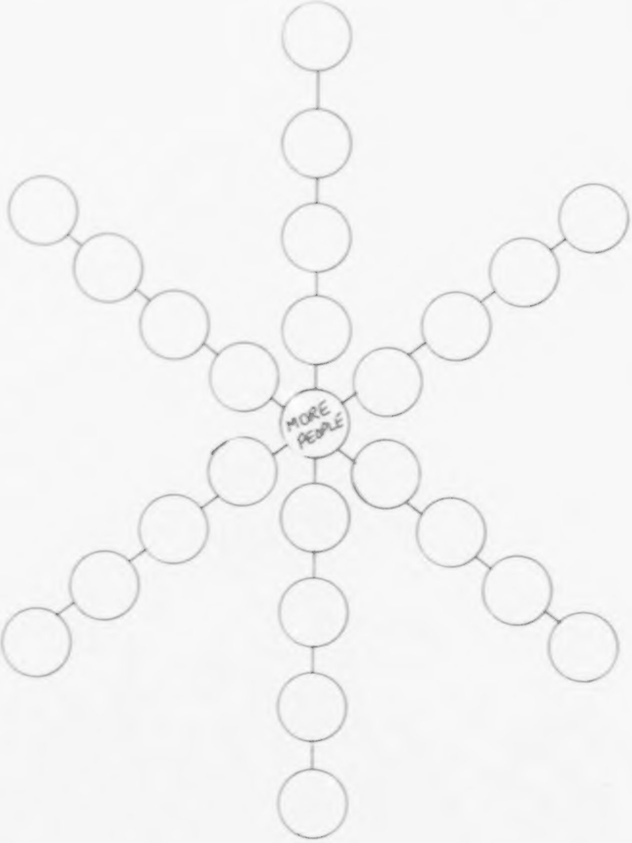


3. Next, draw spokes from the second ring of circles and, at the end of these, other circles. Within these, write a third group of forecasts. These should be direct consequences of the second ring of forecasts.



Futures Wheel

4. Identify the circles that have relationships to each other by coloring all related circles in the same color. For example, all circles having one relationship can be red, others green, and so on.



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[1] The Futures Wheel technique is described more extensively in "Easy Ways to Help Children Think About the Future", *The Futurist*, August, 1984, published by the World Future Society, 4916 St. Elmo Ave., Bethesda, MD 20014.

Adapted from ***Futures Handbook*** by Judith Hellfach. Published by Prentice-Hall, Inc., Box 500, Englewood Cliffs, NJ 07632, 1977. Used with permission.

FUTURE THINKERS

STUDENTS SELECT ONE OF THE FOLLOWING CREATIVE FUTURE THINKERS AND WRITE A BIOGRAPHY OF THAT PERSON.

OBJECTIVES *The students will*

be able to recognize the characteristics creative thinkers possess.

be able to recognize that they possess some of these characteristics.

ACTIVITY/ DISCUSSION List the following creative future thinkers on the board and ask students to research the life of one of the persons and write a biography. Encourage students to include in their report some of the ideas, works, or designs that were ahead of their time. Also, students should include the individual's personal traits, such as curious, bored, lazy, and/or energetic.

Thomas Edison
Leonardo da Vinci
Jules Verne
Aldous Huxley
Mies Van der Rohe
Buckminster Fuller
Benjamin Franklin
Louis Pasteur
Albert Einstein
H.G. Wells
Ero Saarinin
Le Corbusier
Paolo Soleri
Moshe Safdie

When students complete and share their reports, lead a discussion focusing upon the development of a list of "common characteristics of the creative future thinker". Ask students to identify which of the characteristics they also possess.

Adapted from "Future Learners" by Mona Stacy. Printed by Washington's Futuristic Learners Program, 5101 Douglas Dr., Yakima, WA 98908.

> *"The wave of the future is coming and there is no stopping it."*
> — Anne Morrow Lindberg

TRENDS OF SOCIETY

STUDENTS APPLY SPECIFIC EXAMPLES OF TRENDS FOR EACH ELEMENT OF A CULTURE.

OBJECTIVES *The students will*

understand the interaction between the various elements of culture.

be able to categorize kinds of trends under elements of culture.

be able to list the major elements of a culture.

understand the models of culture presented.

ACTIVITY/ DISCUSSION Explain that there are five elements of culture. Stress that each of these elements may vary from culture to culture in the way it manifests. Write the five elements on the board and discuss what each is.

People: Total population, its composition in age, sex, religion, ethnic and/or racial background, and its geographic distribution.

Habitat: Geographical characteristics of the territory controlled by members of a culture, including size, shape, topography, climate, and resources, and the ways the people use or adapt to them. Includes types of housing.

Organization: Institutions such as the government, the economy, the educational and welfare systems, and the churches and other religious bodies through which a culture carries out important functions. Institutions consist of local and regional organizations, including state legislatures, city councils, schools, churches, factories, shops, and hospitals.

Technology: Tools and techniques people in a culture use to make things and the things they use for food, clothing, shelter, transportation, communication, leisure, and other needs.

Ideas: Dominant beliefs regarding human behavior, nature and supernatural or unexplained events, goals, attitude toward right and wrong, beauty, time, space, causality, and views on the future.

Ask the students to give an example of how each element interacts with the other. For example, explain that the larger the population (people), the greater the exploitation of natural resources (habitat) is likely to be. Habitat may determine what forms of transportation are used (technology). Educational and religious organizations reflect ideas about human nature and goals.

Since the elements are interrelated, change in one affects the others. Ask students to provide examples.

Because the characteristics of culture determine what kind of life people lead, it is helpful to look at trends to indicate consistent tendencies or patterns of behavior over a period of time. Ask the students to brainstorm trends which indicate patterns of behavior for each element of culture. Write the five elements of culture on the board and write examples of trends under each element.

Conclude by asking students how trends tie in to a study of the future.

People	**Habitat**	**Organization**	**Technology**	**Ideas**
Communes	Dome House	Sierra Club	Laser Medicine	Marxism

"Humankind, seen as an organism, seems to be undergoing a major transformation that resembles the maturation processes of biological development – the growth of child to adult or the metamorphosis of tadpole to frog, caterpillar to butterfly." — Jonas Salk, *Anatomy of Reality*

CAN TRENDS TELL THE FUTURE?

STUDENTS PROBE PAST AND PRESENT TRENDS AND IDENTIFY ONE TREND TO RESEARCH.

OBJECTIVE

The students will

be able to trace trends in the past and present to understand the direction of the future.

ACTIVITY/ DISCUSSION

Ask students to review the list of trends brainstormed in the previous activity. Their task is to choose one trend to research in an attempt to understand the direction the future might take. Have the students answer each of the questions listed on the **Trend Analysis Worksheet** in light of the trend they choose. Note that not all of the questions may be applicable to each trend.

After students have completed the **Trend Analysis Worksheet**, ask them to brainstorm possible future trends. Discuss each trend and the effect it may have on the culture.

TREND ANALYSIS WORKSHEET

Choose a present trend, e.g., computers for home use, and answer each of the following questions regarding the trend. Summarize with a paragraph stating your predictions of the trend's life and impact on the future.

1. What are the underlying causes which created the trend in the past?

2. How stable are those conditions likely to be in the future?

3. What *new* developments are necessary for the continuation of the trend?

4. What new developments might alter it?

5. Is the trend approaching some saturation point or limit?

6. Does it conflict with some other trend?

7. Does the trend benefit government, business, or other groups, and will they (can they) support the trend if it falters?

8. Does the trend have potentially harmful consequences or side-effects?

9. Are there likely to be deliberate efforts to halt or alter the trend?

10. How easily can the trend be halted and how long would this take?

11. How much time is likely to elapse between the appearance of a problem and the point at which the problem becomes a crisis?

12. If the trend does not continue, what are the most likely alternatives?

From ***Futurism and Future Studies*** by Draper Kauffman. Published by National Education Association, 1201 16th St., N.W., Washington, D.C. 20036, 1976. Used with permission.

FORECASTING THE FUTURE

Cultures are composed of basic elements. As students visualize one of these elements, they will forecast its ultimate manifestation into the future. In groups, students develop a presentation of a cultural element as they project it to be . . . in one hundred years. Eventually, the groups will come together to create a "whole future". This project requires creative, strategic planning, and group decision making ability. It also requires students to approach the future in a pro-active (rather than a re-active) manner. Because students are asked to create a "whole future", they begin to recognize the need for interaction and communication among the different groups. Many times elaborate communication systems are developed so that there is an increased flow of information among the groups. Group decision-making processes are created. Students begin to value the importance in communicating information-sharing of each other's developments in order to have their "future world" harmonious and balanced.

CULTURAL ELEMENTS OF THE FUTURE

STUDENTS WRITE A DESCRIPTION OF THE FUTURE BASED ON ONE CULTURAL ELEMENT.

OBJECTIVE *The students will*

be able to visualize how a cultural element will manifest in the future.

ACTIVITY/ DISCUSSION

Review elements of a culture as stated in this unit. Explain to students that they will choose an element that interests them. Have students break into groups according to their interests.

Ask students to close their eyes and relax their bodies. Project the students one hundred years into the future. Ask them to see the element of interest to them manifested in the future. Bring the students back to the present.

Ask each student to write a description of what they saw for sharing with their group.

Allow approximately one half hour for the groups to share their descriptions with each other. Ask each group to decide the general direction and future of their cultural element and have them present it to the class.

WORKING ON THE FUTURE

STUDENTS DISCUSS THE PROCEDURE FOR THE FUTURISM UNIT AND DECIDE ON A PRESENTATION MODEL.

OBJECTIVES *The students will*

understand the procedure for the futurism unit.

decide on a way to present their future.

ACTIVITY/ DISCUSSION Explain to students that, as a class, they are going to create the future. Each group will be responsible for describing to the rest of the class how their cultural element will manifest itself one hundred years from now. Students should make their presentations as stimulating as possible. For example, groups could present their future through a skit . . . short story . . . multimedia presentation . . . or a combination of the above. Encourage students to share their future in a creative and exciting manner.

Explain that they will have fifteen hours of class time to create their future and prepare for their class presentation.

What the caterpillar calls the end of the world, the master calls a butterfly.
— Richard Bach, *Illusions*

WORKING WITH THE WHOLE GROUP

STUDENTS ESTABLISH A COMMUNICATION SYSTEM BETWEEN THE DIFFERENT GROUPS.

OBJECTIVE *The students will*

be able to unite the cultural elements into creating a "whole" future.

ACTIVITY/ DISCUSSION Ask each group to choose a representative to share with the entire group how they see their element manifesting itself. Encourage discussion after each presentation.

Stress that each group represents a *part* of the *total* future. Guide students to see the importance of communications between each group. For example, the habitat group needs to know what the technology group has planned for transportation before they can appropriately plan housing for the people.

Ask students to think of ways to increase communications between groups so that, at the end of the unit, they have plans for an integrated future. Suggestions might include a meeting schedule placed in the room for students to schedule meetings with different groups, a weekly group meeting to update everyone, etc.

As a class, decide on a communications structure and encourage students to follow it.

PRESENTING THE FUTURE

STUDENTS PRESENT THEIR FUTURE IN A CREATIVE MANNER.

OBJECTIVE

The students will

be able to incorporate work from the groups and incorporate it into a futures presentation.

ACTIVITY/ DISCUSSION

Provide class time for each of the groups to present their future. At the end of the presentations, ask students if the parts of their future fit together well. Did the group operate as a whole and manifest each of the cultural elements so that they worked together rather than against each other?

Ask students if they can come up with a whole class presentation that represents their future. Ideas might include a future newspaper distributed throughout the entire school, a play that synthesizes all cultural elements, or a group-written book that describes their future.

ADDITIONAL RESOURCES

A WORLD FOR TOMORROW

America and the Future of Man, Courses by Newspaper. University of California, San Diego, CA: CRM Books, 1973.
Best, Fred, ed., ***The Future of Work***. Englewood Cliffs, NJ: Prentice-Hall, 1973.
Clark, R., ed., ***Notes for the Future***. New York: Universe Books, 1976.
A Creative Classroom Activity – Value Questionnaires for Future Studies. Sun Valley, CA: EDU-GAME, 1976.
Dickson, Paul, ***The Future File***. New York: Rawson Associates Publishers, Inc., 1977.
Dougherty and Evans. ***Grokking Into The Future***. East Windsor Hill, CT: Synergetics, 1981.
Goodwin, Peter, ***Future World***. New York: The Hamlyn Publishing Group Ltd., 1980.
Helfach, Judith, ***Futures Handbook***. Englewood Cliffs, NJ: Prentice-Hall, 1977.
Kahn, Herman, et al, ***The Next 200 Years: A Scenario for America and the World***. New York: Simon and Schuster, 1976.
Kauffman, Draper Jr., ***Futurism and Future Studies***. Washington, D.C.: National Education Association Publications, 1976.
McHale, John, ***World Facts and Trends***. New York: Collier Books, 1972.
Meister, Teddy, ***Tomorrowise – Activities for the Future***. Phoenix, AZ: Think Ink Publications, 1980.
Onosko, Tim, ***Wasn't the Future Wonderful***. New York: E.P. Dutton, 1979.
Rosen, Stephen, ***Future Facts***. New York: Simon and Schuster, 1976.
Silverberg, Robert, ed., ***Windows Into Tomorrow***. New York: Hawthorn, 1974.
Tanner, Joey, ***Futuristics, A Self-Directed Learning Unit***. Tucson, AZ: Zephyr Press, 1981.
Theobald, Robert, ***Futures Conditional***. Indianapolis, IN: The Bobbs-Merrill Co., Inc., 1972.

FILMS:
Business: Brother Can You Spare $100,000,000? (22 minutes; color; Document Assoc.: Towards the Year 2000 Series).
Family: Lifestyles of the Future (22 minutes: color; Document Assoc.: Towards the Year 2000 Series).
From the Face of the Earth (16 minutes; color; King Screen Productions).

8

To a butterfly, wings provide freedom and assist in survival. Like a butterfly, a mind's freedom lies in its creativity and perception of the world.

In this final unit, like the butterfly, students are ready to explore the world on their own.

INDEPENDENT LEARNING

Independent Learning provides a format for conducting independent study with students. In this unit, students choose a topic of interest and develop a plan of study. Students are provided with class time to pursue their project. At the completion of this unit, students share their projects in an effort to impart the knowledge they learned to others.

Preparing for Independent Learning

Students pursue a topic of personal interest . . . explore their own independent approach to the learning process . . . and identify their project design. The intention is to reinforce and illustrate the real joy of learning. After identifying their topic and project design, students will begin to form their learning goal and the necessary objectives. A variety of ways in which they can gather information and share their project with others is introduced. Students explore ways to become responsible in using class time and in meeting their own proposed deadlines. After working through the activities presented here, the students will realize the aspects important in facilitating their own learning. Students will also have generated a number of areas to pursue and many ideas for creatively carrying out their projects.

SHEDDING THE CHRYSALIS

STUDENTS PARTICIPATE IN A DISCUSSION ON HOW THEY CAN LEARN INDEPENDENTLY.

OBJECTIVE *The students will*

understand the required steps of independent study.

ACTIVITY/ DISCUSSION Explain to students that they will be responsible for the four hours of class time set aside for independent study. There will be times when the students will not be able to work on their project in class. Some of the projects may require out of class work, or students may be waiting to conference with you. Providing alternative activities or learning centers for students to choose from keeps the emphasis on independent learning.

"The whole art of teaching is on the art of awakening the natural curiosity of young minds for the purpose of satisfying it afterwards." — Anatole France

CHOOSING A TOPIC

STUDENTS COMPLETE AN INTEREST INVENTORY AND DECIDE ON A TOPIC TO PURSUE INDEPENDENTLY.

OBJECTIVE

The students will

be able to decide on a topic that interests them for independent study.

ACTIVITY/ DISCUSSION

Explain that the most important thing about an independent project is to choose a topic that is extremely interesting to the person...something that will hold their interest through the four-week period. The topic can be in any subject area...science, history, the fine arts, sports. The students also can extend their learning in one of the previous units explored. (The most important thing for students to remember is that it should be a subject they really want to learn about. It is their responsibility to see that they do not become bored with their subject although, in some instances, you will need to guide and motivate certain students.) To aid students in choosing a topic for independent study, have them complete the **Interest Inventory** on the next page.

Once students have decided upon an area that is of interest, allow some exploratory time before requiring topic narrowing. Emphasize the importance of narrowing a topic. Discourage students from choosing a broad topic, such as astronomy. Instead, guide the student to list the subtopics of astronomy, and then choose a more manageable topic, e.g., the study of Jupiter. This will enable exploration of the topic in greater depth.

Distribute construction paper to students, suitable for making an Independent Study Folder. Explain that this folder will contain everything related to their project. They should bring their folders to each class meeting, and each time they conference with you.

Ask students to write down their topic of study. At this point, it will be necessary for you to check each of the topics and discuss with the students what problems, if any, might arise from pursuing this topic, as well as various ways to approach the topic.

INTEREST INVENTORY

Name ______________________ School ______________________

At school, the things I like best are ______________________

____

At school, the things I like least are ______________________

____

I would like to find out more about ______________________

At home, the things I like to do best are ______________________

____

At home, the things I like to do least are ______________________

____

If I were to become a vegetable, I would be a ______________ because

____

I like TV programs about ______________________

I like to read about ______________________

My favorite trip would be to ______________________ and I would

like to take ______________________ with me because __________

____

My hobbies are ______________________

I would like to NEVER have to ______________________again.

I like to spend my free time______________________

As a career, I feel I would choose ______________________ because

____

I know I would NEVER want to be a ______________________ because

____

If I could be someone else for a day, I would like to be ______________

because ______________________

The animal I would choose to be (if I could) is the ______________

because ______________________

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PROJECT DESIGN

STUDENTS DISCUSS A VARIETY OF PROJECT DESIGNS THAT COULD BE USED FOR THEIR INDEPENDENT STUDY.

OBJECTIVE *The students will*

decide the project design suitable for their area of study.

ACTIVITY/ DISCUSSION Explain that a written report is only one of the many project designs. Ask students to brainstorm different ways they could design projects.

On the next page is a list of different project designs from which to choose. Explain that the choice of the topic may be a factor in determining which design will be used. Some topics will lend themselves well to more than one design.

Read over the various designs, discussing each one. Ask if students can add any more. Direct students to choose one design, or combine two or more that would be suitable for their project. Have them write down the project design(s) they have chosen and place in their folder.

IDEAS FOR PROJECT DESIGNS

A written report is only one of many project designs. The choice of the topic can be a factor in determining which design will be used. Some topics will lend themselves well to more than one design. Below you will find a variety of project designs. Choose one, or combine two or more that could be used for the topic you are pursuing.

a. **Research**: Finding information in reference sources that relates to the questions you are exploring. This information is then organized according to your plan for sharing and displaying.

b. **Experiment**: Experimenting to find the answer to a research question. This project design requires research, record keeping, and writing a final research paper.

c. **Construction**: Constructing a life-size or scale model as your end product. If possible, it should be an original design.

d. **Survey-Opinion**: Surveying people to find information regarding your topic. This requires you to decide on the purpose of your survey, design, or instrument that will set the purpose, gather data, compile, analyze, and evaluate results.

e. **Performing Arts**: Choosing an area within the performing arts. This requires you to set a specific goal within a time frame and plan a program to achieve that goal. An example might be the writing and performing of a play.

f. **Multi-Media**: Organizing a class or school newspaper, producing an 8mm film, or writing and directing a radio show.

g. **Teaching Demonstration**: Giving a lesson that shares information of a "how-to" session. This would require planning, research, organization, and evaluation.

h. **Group Participation**: Designing a class project that involves the whole group. It might be to design a new game for the class to learn, a class or school tournament/contest, or a writing/math/science fair.

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WHAT'S YOUR GOAL?

STUDENTS REVIEW WHAT A GOAL IS AND ESTABLISH GOALS AND OBJECTIVES FOR THEIR INDEPENDENT STUDY.

OBJECTIVE *The students will*

write one goal and a minimum of three objectives for their independent project.

ACTIVITY/ DISCUSSION Explain that ***Webster's Seventh New Collegiate Dictionary*** defines "goal" as *"that toward which effort is directed"*. Ask students to think about what it is that they wish to achieve at the end of their project. This may be in terms of what they desire to learn or what their accomplishments are at the end of the study. Below are examples of project goals:

To solve the problem of world-wide hunger
To analyze the theories of why the dinosaurs disappeared
To compose an original piece of music
To create a model of an original transportation system

Re-emphasize that the students' goal is a statement of what they will learn or what they will accomplish at the end of their project. The project objectives will indicate what they need to do to achieve the goal. For example, if the project goal is "to compose an original piece of music", the following objectives might be written:

Listen to a variety of pieces composed by my favorite musicians.
Interview a musician who composes his/her own songs.
Draft an original piece.
Rewrite and draft a final piece of music.
Present to the class for input the original piece of music.

When students have a clear understanding of writing goals and objectives, have them write down one goal and a minimum of three objectives for their project. Have students place their goal and objectives in their folder.

Conferences should be set to check the students goal and objectives.

"I want to be all that I am capable of being." —Katherine Mansfield, *Journal, 1922*

SHARING YOUR PROJECTS

STUDENTS DISCUSS VARIOUS WAYS THEY CAN SHARE THEIR FINAL PROJECTS.

OBJECTIVE

The students will

decide on a sharing plan.

ACTIVITY/ DISCUSSION

Explain that once they have finished their project, the final step is to share it with others. It's a way of saying, "I've worked hard and here is what I've accomplished." It's also a wonderful way to share with others the knowledge gained from the project.

As a whole group, brainstorm various ways projects can be shared. List the ideas on the blackboard. Direct students to the various categories, such as visual, audio, participation, etc., in an effort to elicit varied responses. Ideas might include:

- performing a play or making a videotape to explain the content of the project
- writing a story or poem
- developing word finds and crossword puzzles
- making diagrams, charts and graphs
- creating a game or an activity
- conducting a discussion panel, debate and/or class discussion

Ask students to select a number of varied approaches to share their project. Encourage students to mix "a little visual with the verbal" and "a little doing with the listening". Impress upon students the importance of allowing class discussions after each presentation. It helps the others to make connections and ground the information presented.

Have students draft a sharing plan for your review. Finalize plans for presenting to the class.

GATHERING INFORMATION

STUDENTS LEARN THE VARIOUS WAY THEY CAN OBTAIN INFORMATION REGARDING THEIR TOPIC.

OBJECTIVE *The students will*

use a minimum of three different information sources when gathering information on their topic.

ACTIVITY/ DISCUSSION Explain that once an area of study has been identified, the student will need to gather information and data on their topic. There are a variety of ways to gather information. Books are great, but interviewing real people can be more exciting. Ask students to brainstorm as many ways as possible to gather information. (Encourage the use of many sources in the library . . . veer the students away from dependence on the encyclopedia.)

Ask students to write down a minimum of three different ways that they could gather information for their project. Have them place the list in their folder.

DEVELOPING A PROJECT TIMELINE

STUDENTS DISCUSS THE IMPORTANCE OF TIMELINES WHEN WORKING ON LONG-TERM PROJECTS.

OBJECTIVE *The students will*

be able to understand the different ways timelines can be made.

establish a timeline for their project.

ACTIVITY/ DISCUSSION Explain that students will have a four-week period in which to complete their project. Because they will be responsible for using their class time in the most effective way, they will be required to create a project timeline. This timeline will outline, in successive order, the tasks and approximate dates each will be accomplished. It is important to stress that the student may not complete all the tasks in accordance to their timeline and that it is all right. The timeline is designed to outline the steps they need to complete and the approximate dates each should be finished. It is the *ideal* order of events. Provide students with examples of timelines.

Allow class time for students to develop their timelines. Have them place their timelines in their folder for your review.

"One must learn by doing the thing, for though you think you know it, you have no certainty until you try. – Sophocles

FACILITATING INDEPENDENT LEARNING

Now begins the implementation of the student's project. After reflection and possible revision of the original plan, the students are ready to complete their Independent Project Contract. This includes indicating the subject of the study, the project design, a brief description of the project, the project goals and objectives, information sources, project timeline, and plans for sharing the results of the study. It is important for students to get their whole plan down on paper before proceeding. This provides the teacher with a written account of the students' intentions... a help in conferencing or directing students to various resources. In addition, students will use Daily Planning Sheets. These are helpful in guiding students to use their class time in a responsible way. Reviewing the planning sheets can also provide illuminating information when evaluating the student's work. As students proceed with their projects, plan to conference and evaluate their progress from time to time. The purpose of the conference is to assist the students in problem-solving, to provide them with your input, and to analyze their independent learning skills. (Students or the teacher may request a conference.)

When the time comes to evaluate the projects, a variety of criteria can be used. The evaluation presented in ***CHRYSALIS*** is designed to assess the process, content, and presentation aspects of each study. Feel free to establish your own criteria. One of the important aspects of evaluating learning is to also receive input from students. (A student evaluation form is provided in this section.) By completing the form, students begin to identify what they learned about their subject as well as about themselves.) This is an essential aspect to the learning process... the ability to assess and evaluate one's own work. Overall, it is the intention of this project to illustrate to students that learning is fun. At the same time, an opportunity is provided to apply the thinking skills presented in ***Chrysalis*** through self-directed learning.

Be sure to plan a way to show and share the student projects. Some of the ways suggested here are to have a parent night or a class presentation. (Let student creativity flow as the event is planned!)

Author's Note: Each year I have my students evaluate the school year in regard to the curriculum. Every year, Independent Study always receives the highest evaluation. The kids love it! And I must say, facilitating an independent study has always been one of my most rewarding classroom experiences. The motivation, enthusiasm, and creativity that the children emanate is inspiring, as well as contagious! M.MC.

PROJECT CONTRACT

STUDENTS FINALIZE THE PLANS FOR THEIR PROJECT.

OBJECTIVE *The students will*

fill out their **Project Contract.**

ACTIVITY/ Explain that it is now time for them to finalize their project plans. This step requires filling out the **Independent Project Contract**. Ask students to review their project design, goal and objectives, information sources, timeline, and sharing plans. If all of these have received your O.K. and the students are satisfied with the plans, they may proceed by completing the **Independent Project Contract** on the next page.

Have students place their completed **Independent Project Contract** in their folder for your review.

INDEPENDENT PROJECT CONTRACT

Name ______________________________ Date ________________

Project Title: ____

Project Design: ____

Planned Completion Date: ______________________________________

Project Description: ____

____

____

____

____

Project Goal: ____

____

Project Objectives:

1. ____
2. ____
3. ____

Information Sources:

1. ____________________________ 4. ____________________________

2. ____________________________ 5. ____________________________

3. ____________________________ 6. ____________________________

Project Timeline:

Sharing Plans:

Student Signature:
Parent Signature:
Teacher Signature:

Comments:

PLANNING YOUR DAY

STUDENTS ARE INTRODUCED TO PLANNING AND EVALUATING.

OBJECTIVE *The students will*

plan and evaluate each class or day designated for work on their independent projects.

ACTIVITY/ DISCUSSION Re-emphasize that the students are responsible for their use of class time when working on their projects. Share with students the **Planning Sheet** found on the next page. Explain that they will complete a **Planning Sheet** each class period designated for independent study. Go over the **Planning Sheet** with the whole group. The goal section should reflect what the student hopes to accomplish in this time period. Refer back to the first unit, *Goal Setting*, if necessary. The "Things to Do" section lists the tasks they need to do in order to accomplish their goal.

Provide at least fifteen minutes at the end of the class period for personal evaluation of the quality of their work for the day. The last two parts ask students to record what they learned about their project and themselves. This last part should reflect what the students learned about their learning or working style, interaction with other classmates, or their recognition of a new interest or talent.

Each **Planning Sheet** should be placed in the student's file to be used in the final evaluation of the student's project.

PLANNING SHEET

Name ______________________________ Date ________________

Project Title: ____

Goal(s): ____

____

____

Things to do: ____

____

____

____

Key: On a scale of 1-5 the highest rating is **5**.

EVALUATION:

I accomplished my goal	yes	no			
How I used my time	1	2	3	4	5
The project work I did was	1	2	3	4	5
I helped others	1	2	3	4	5

What I learned about my project: ______________________________

____

____

What I learned about myself: _________________________________

____

____

Adapted from ***Independent Projects*** by Eleanor Villalpando and Kathy Kolbe. Copyright © 1979 Think Ink Publications, a division of Resources for the Gifted, Inc. Permission to publish granted by Resources for the Gifted, P.O. Box 15050, Phoenix, AZ 85060.

STUDENT CONFERENCES

STUDENTS LEARN THE PROCEDURE FOR SIGNING UP FOR TEACHER CONFERENCES.

OBJECTIVE *The students will*

sign up for a minimum of three teacher conferences throughout the time spent on independent projects.

ACTIVITY/ DISCUSSION Explain that the teacher's job, while students are working on their projects, will be to conference, provide guidance and resources, and help solve problems as they arise. It is the students' responsibility to sign up for a conference. Before each class meeting, write on the board, "Conferences". Students can sign up as the conference is needed. There will be some students who will sign up every day for a conference and others who will never sign up. It is important to monitor each of the students and occasionlly touch base with those students who have not seen you for a conference.

If arrangements can be made with the school office (and students are permitted to use the telephone to call resource persons), you will want to develop a telephone checkout list to keep track of the students using the phone. You may also want to establish a similar form for students going to the library.

SHARING YOUR PROJECT

STUDENTS SHARE THEIR PROJECTS WITH AN AUDIENCE.

OBJECTIVE *The students will*

present their projects to an audience.

ACTIVITY/ DISCUSSION There are a number of ways students can be given the opportunity to share their projects. The easiest way is to have students present their projects to each other. Plan on five minute to thirty minute presentations.

Another way to share projects is to have a Family Night where family and friends come to view the project display and listen to student presentations. If you have a large group of students and choose to have a Family Night or an Independent Project Fair, it may be impossible to listen to all the student presentations. If this is the case, have a number of students volunteer to give presentations and the rest of the students can discuss their projects when people view their displays. This is an excellent opportunity for students to use and develop planning, organizing, and advertising skills.

EVALUATING YOUR PROJECT

STUDENTS EVALUATE THEIR OWN PROJECTS AND LISTEN TO INPUT PROVIDED BY THE TEACHER.

OBJECTIVES *The students will*

be able to evaluate their project. Students will be provided input by the teacher on the quality of their work.

understand what was well done in their project and what is in need of improvement.

ACTIVITY/ DISCUSSION On the following pages are student and teacher evaluation forms for evaluating students independent projects. You may choose to adapt parts of the system or develop your own to fit the needs of your class. The grade breakdown based on the points earned has been left up to you.

Have each student fill out the **Student Self-Evaluation Sheet** and ask students to turn it in to you with their Independent Project folder and final product. Evaluate each student's performance, using the **Teacher Evaluation Sheet** or your own evaluation sheet. If possible, meet with each of the students to discuss the evaluation. Stress what was done well and discuss honestly areas in need of improvement.

To bring this unit and the preceding units to closure, discuss with students what they have learned about being a creative and independent learner. Ask students how these skills might help them in "everyday life".

"You cannot teach a man anything. You can only help him discover it within himself." —Galileo

STUDENT SELF-EVALUATION SHEET

Name ______________________________ Date ________________

Project Title: ____

DIRECTIONS: On a scale from 1-5, rate the following to indicate your evaluation of your project.

	LOW RATING				HIGH RATING
1. The project work I did was	1	2	3	4	5
2. My project includes creative ideas	1	2	3	4	5
3. The research I did on my project was	1	2	3	4	5
4. I used a number of different types of resources	1	2	3	4	5
5. My project reflects my own ideas	1	2	3	4	5
6. My project is well organized	1	2	3	4	5
7. My project uses correct spelling and punctuation	1	2	3	4	5
8. My project presentation was	1	2	3	4	5
9. I learned a lot of new information and ideas	1	2	3	4	5
10. My project shows effort	1	2	3	4	5

What I liked best about doing my project was . . .

If I were to do this project again, I would improve upon it by . . .

TEACHER EVALUATION SHEET

PROCESS EVALUATION

1. Completed Planning Sheets

1	2	3	4	5
NONE COMPLETED		HALF COMPLETED		ALL COMPLETED

2. Used time effectively (points taken from Planning Sheets). Compute average.

1	2	3	4	5
LEAST TIME EFFECTIVE				MOST TIME EFFECTIVE

PROJECT EVALUATION

1. Used different information sources

1	2	3	4	5
ONE INFORMATION SOURCE				5 OR MORE INFORMATION SOURCES

2. Completed project according to project timeline

1	2	3	4	5
PROJECT NOT COMPLETED				ON TARGET

3. Showed effort

1	2	3	4	5
NO EFFORT				EXCELLENT EFFORT

4. Creativity

A. Fluency (number of ideas)	1	2	3	4	5
B. Flexibility (different ways of sharing ideas)	1	2	3	4	5
C. Originality (uniqueness)	1	2	3	4	5
D. Elaboration (development of ideas)	1	2	3	4	5

PRESENTATION

1. Used various sharing ideas

1	2	3	4	5
ONE IDEA				5 OR MORE IDEAS

2. Presented material in interesting manner

1	2	3	4	5
NOT SO INTERESTING				VERY INTERESTING

3. Showed effort

1	2	3	4	5
NO EFFORT				EXCELLENT EFFORT

4. Taught something to others

1	2	3	4	5
TAUGHT A LITTLE TO OTHERS				TAUGHT A LOT TO OTHERS

TOTAL POSSIBLE POINTS 65

TOTAL POINTS EARNED _____

ADDITIONAL RESOURCES

INDEPENDENT LEARNING

Breyfogle, Ethel, ***Creating a Learning Environment: A Learning Center Handbook***. Santa Monica, CA: Goodyear Publishing Co., Inc., 1976.

Evans and Dougherty, ***Self-Starter Kit of Independent Study***. East Windsor Hill, CT: Synergetics, 1980.

Heuer, J., A. Koprowica, and R. Harris, ***M.A.G.I.C. K.I.T.S.*** Connecticut: Creative Learning Press, 1980.

Kaplan, Madsen, and Gould, ***Big Book of Independent Study***. Glenview, IL: Scott-Foresman & Co.

Renzuli, Joseph, ***Interest-A-Lyzer***. Mansfield, CT: Creative Learning Press.

Stoltz, Bernadine S., and P.W. Saloom, ***The Why, What, and How of Interest Development Centers***. Mansfield Center, CT: Creative Learning Press, 1977.

Villalpando, E., and K. Kolbe, ***Independent Projects***. Phoenix, AZ: Think Ink Publications, 1979.

ADDITIONAL RESOURCES FROM ZEPHYR PRESS TO ENRICH YOUR PROGRAMS—

***PICTURE THIS:* Teaching Reading Through Visualization**
by Laura Rose (1988)
You can use visualization as a component to a literature-based reading program. This method of teaching reading links the brain hemispheres. Children who are taught with this technique not only read better . . . their writing improves, too! Grades 4-8.
ZB11-W. $17.95

***KIDVID:* Fun-damentals of Video Instruction**
by Kaye Black (1989)
Even "camera shy" teachers can bring video instruction into the classroom. Here's an easy-to-use guide for video production with nine fully prepared lessons—from the basics to hands-on experience with video equipment. Grades 4-8.
ZB13-W. $13.95

***A MATHEMATICAL MYSTERY TOUR:* Higher-Thinking Math Tasks**
by Mark Wahl (1988)
This unique approach to learning math presents hands-on tasks that pay attention to learning styles and utilize the right hemisphere of the brain. Find out how pineapples, pinecones, pyramids, prime numbers, and planets all march to the same amazing numbers. Grades 5-12.
ZB06-W $19.95

MYSTERY TOUR GUIDE NEWSPAPER
This follow-along newspaper accompanies the book. One copy is needed for each participant.
ZB07-W . . . . $6.95 (set of 5 newspapers)

***MAPPING INNER SPACE:* Learning and Teaching Mind Mapping**
by Nancy Margulies (1991)
With this book you can bring a new and significant advance in note-taking and writing to fellow teachers, parents, students, and your own work! Mind mapping helps you pour ideas onto paper with techniques that nurture thinking skills and creativity. Here's all the information you need to learn and teach mind mapping.
Grades K-Adult.
ZB18-W $21.95

***ME!?* A Curriculum for Teaching Self-Esteem in the Classroom**
by Jo Ellen Hartline (revised 1991)
Bring out the best in your students by helping them develop a sense of self-worth. ME!? has everything you need to set up a Self-Esteem Learning Center in your classroom. Ideas are adaptable to all grade levels. Grades K-8.
ZB04-W $12.95

***A MOVING EXPERIENCE:* Dance for Lovers of Children and the Child Within**
by Teresa Benzwie, Ed.D. (1988)
Let this book dance its way into your heart! More than 100 exercises teach communication skills and self-knowledge, explore the world around and inside, develop creativity. Children feel good about themselves, establish values, and respect and support one another as they explore creative movement. Grades PreK-6.
ZB03-W $21.95

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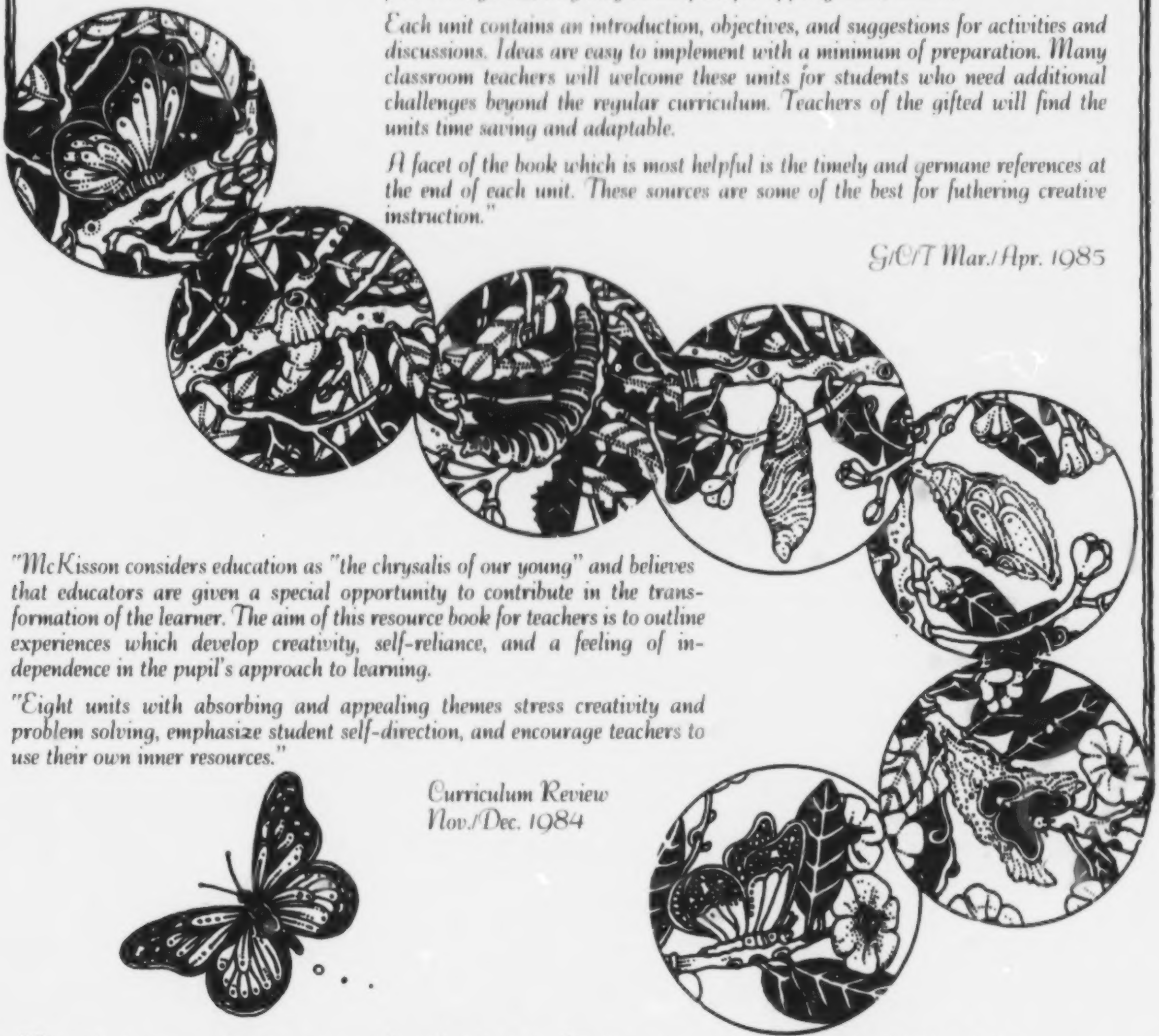

"Chrysalis will be welcomed by classroom teachers as well as teachers of the gifted because its study units provide opportunities for individual differences in interests and abilities among students. The eight units are designed for grades four through six; they may be adapted for upper grades, as well.

Each unit contains an introduction, objectives, and suggestions for activities and discussions. Ideas are easy to implement with a minimum of preparation. Many classroom teachers will welcome these units for students who need additional challenges beyond the regular curriculum. Teachers of the gifted will find the units time saving and adaptable.

A facet of the book which is most helpful is the timely and germane references at the end of each unit. These sources are some of the best for futhering creative instruction."

G/C/T Mar./Apr. 1985

"McKisson considers education as "the chrysalis of our young" and believes that educators are given a special opportunity to contribute in the transformation of the learner. The aim of this resource book for teachers is to outline experiences which develop creativity, self-reliance, and a feeling of independence in the pupil's approach to learning.

"Eight units with absorbing and appealing themes stress creativity and problem solving, emphasize student self-direction, and encourage teachers to use their own inner resources."

Curriculum Review
Nov./Dec. 1984

"Chrysalis is a comprehensive program for gifted students. It will nurture and extend creative thinking in the immediate environment as well as the community at large. This book will also tap the teacher's creativity as it becomes a rich resource of multi-dimensional learning and teaching."

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